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Working Report:
Master Programming for the Longwood Medical Area

November 1981

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INTRODUCTION

This is the Working Report of the first phase of the Master Programming process initiated by the Medical Area Service Corporation (MASCO) to develop and implement a program of area-wide improvement for the Longwood Medical Area. This report is the product of a year-long planning effort involving a team of representative trustees and executives of the MASCO member institutions, senior MASCO personnel, and their planning consultants, Arrowstreet Inc., in interaction with member institution personnel and other area interests. It reflects immediate institutional considerations and initial community input, and represents the start of a process of dialogue with community groups, other area institutions and responsible public agencies, as well as deeper involvement of MASCO member institutions, to broaden the scope of consideration and further the area improvement program.

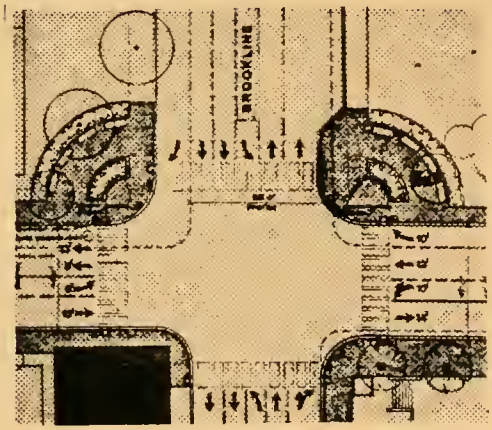
Master Programming was undertaken to permit actions by the MASCO institutions to be done against a background that protects their long-range plans and interests and those of the area as a whole. The program consists of a Framework of area-wide strategies built in part upon the previous planning efforts of MASCO. The Framework is composed of Elements which address actions in the areas of Traffic and Access, Parking, Security, Open Space, Proposed Development Policy, and Long Term Process. Each Element includes a framework - an overriding concept or strategy - which sets a context for specific Action Projects to be pursued to address the problem and work toward improvement of each aspect of the Longwood Medical Area environment.

The Framework for this Working Report has been distributed as a separate document. This report includes the six Elements, each beginning with its framing concept or strategy statement, followed, where appropriate, by sets of near-term Action Projects developed to begin to solve some of the critical problems in the area, and detailed sufficiently to define the next steps required toward their implementation. The final element presents the Long Term Process to initiate the needed further projects and continue development of a broad-scale vision which improves the Framework.

Please direct any questions, recommended changes and comments to:

Donald A. Shea, Manager of Development Coordination, 732-2378
Roger G. Nicholls, Jr., Director of Area Services and Development, 732-2380.

Framework Element 1: Traffic and Access



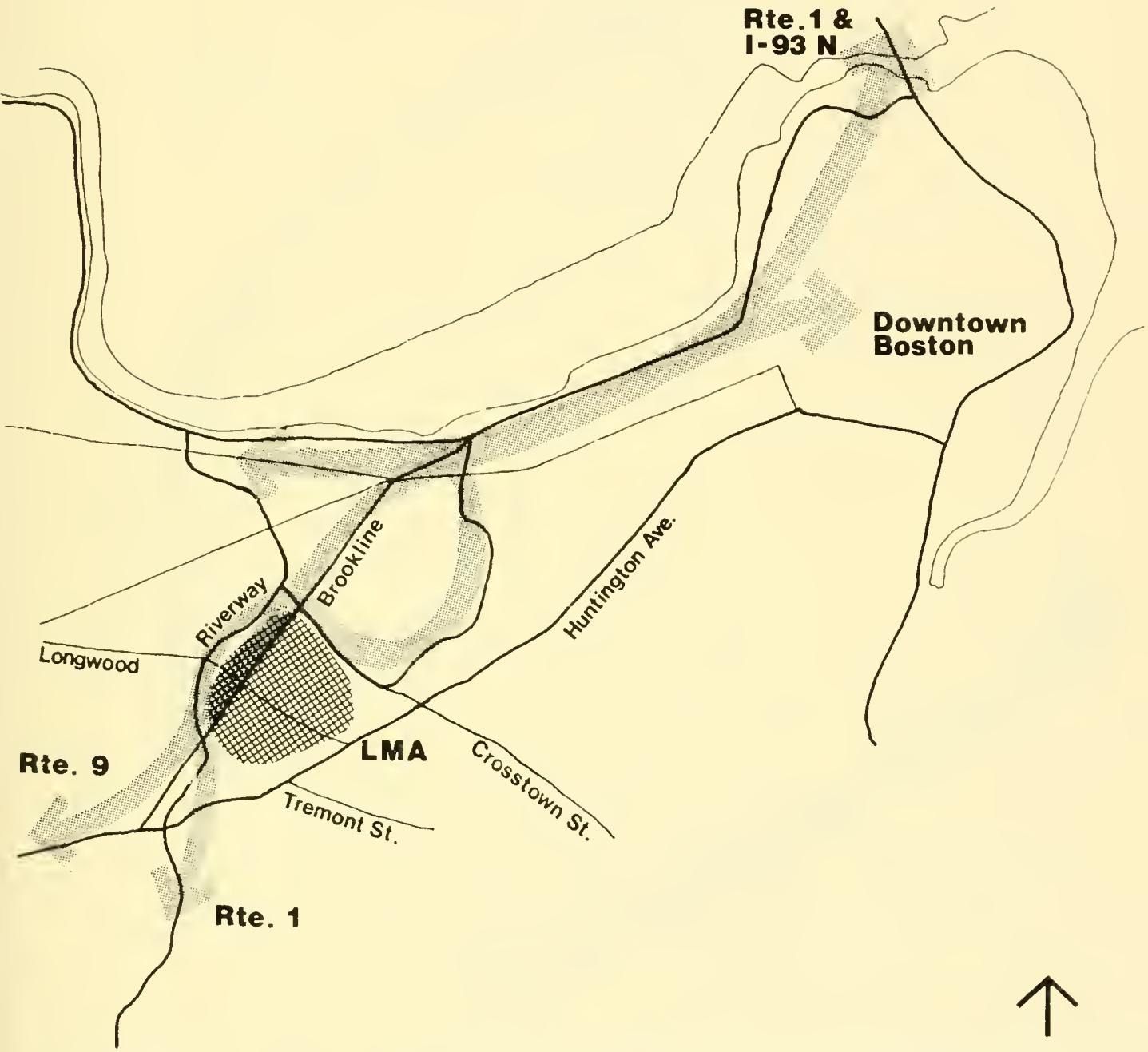
Framework: 1. TRAFFIC AND ACCESS

Regional Context. Plans for improvements to traffic and access in the Longwood Medical Area must reflect the area's position in the regional traffic context (see figure 1-1). The LMA sits astride the major radial traffic corridor between the southwestern suburbs and the key access to the hub of Boston and the further Northeast. Traffic coming from Route 9 and the Jamaicaway most easily connects to Storrow Drive and Downtown Boston through Brookline Avenue and the Riverway. Good alternative routes are unlikely to emerge in the future. The only major through alternative is Huntington Avenue; but even when improved, this gets congested with local traffic along its length, and affords access only to the Theatre District edge of Downtown. Other areas of the Back Bay and Downtown, and routes to the north and east, are better accessed from Storrow Drive and Boylston Street.

Crosstown (southeast-northwest) traffic is not as great a problem for the LMA, because none of the area streets is part of a continuous good through route. Since the defeat of the proposed Inner Belt, no continuous crosstown alternative to Massachusetts Avenue is likely to be achieved. Some crosstown traffic does affect area streets such as Longwood, Francis and the Fenway, and the development of the Crosstown Street through lower Roxbury may increase this flow. Public transit is not likely to significantly ameliorate the radial or crosstown traffic situations over the coming decades, and may need to be supplemented by privately-operated mass transit to continue to serve area transportation needs.

LMA Traffic Strategy. The overall strategy for LMA traffic and access improvement involves: 1. Encouraging through traffic to use routes around the LMA, primarily the Riverway and Huntington Avenue; and 2. Improving flows and access within the LMA through a variety of internal traffic management measures (see figure 1-2). Diversion of as much as possible of the traffic which must pass through this corridor to the arterials surrounding the LMA will leave more of the capacity of the internal streets, especially Brookline Avenue, for local institutional access and egress. These internal streets can then be managed to best serve the local instead of the through-traffic needs.

This area strategy permits a range of options of levels of improvement. Easy-to-achieve, near-term solutions can be implemented without foreclosing more major or difficult efforts. These may range from marking and signing turn lanes, to developing one-way patterns, to major street reconstruction and grade separation. All efforts should be complementary and reinforce the overall strategy direction, as indicated in the list of action projects, below.



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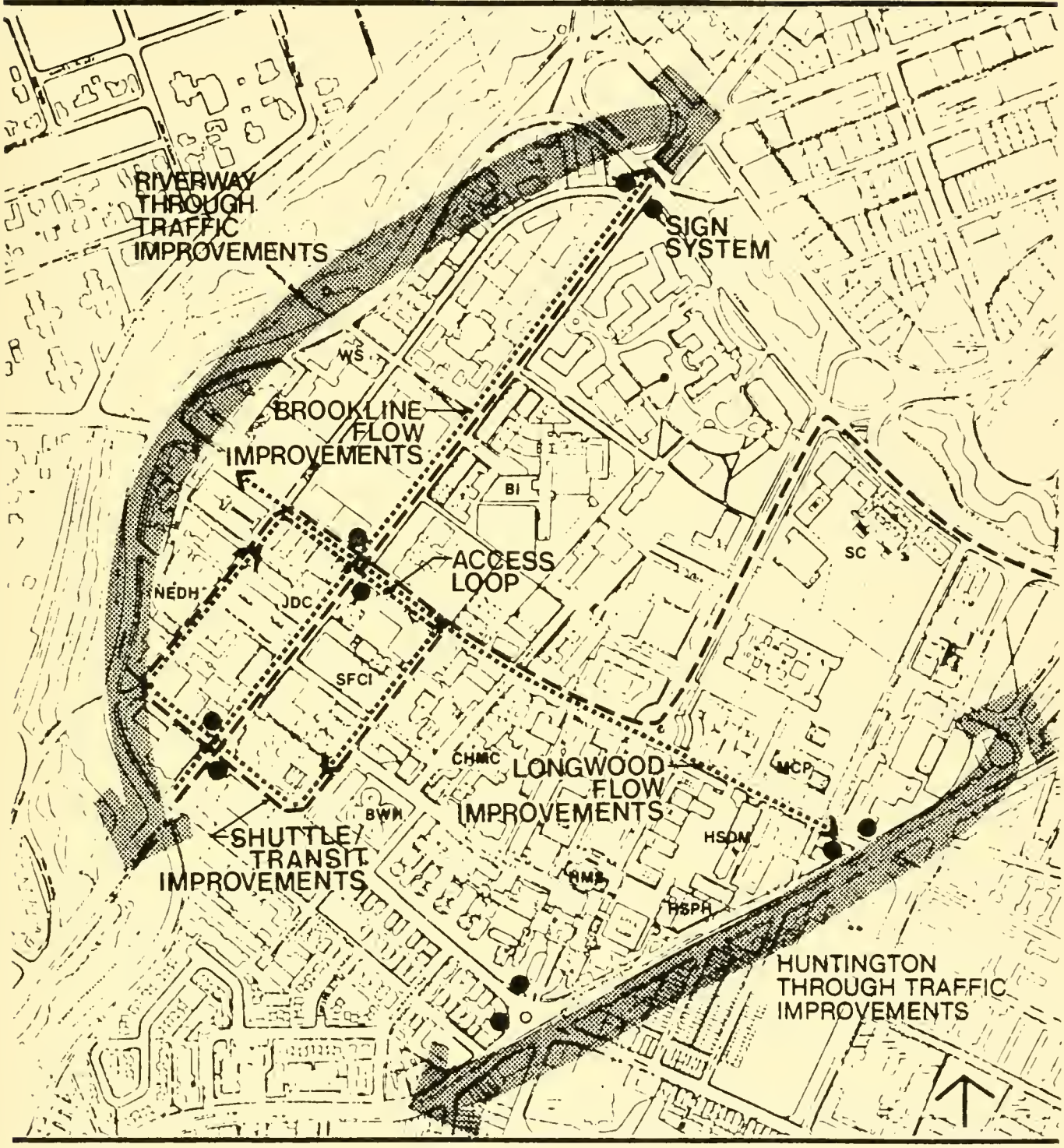
REGIONAL TRAFFIC CONTEXT



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LMA TRAFFIC STRATEGY AND IMPROVEMENT PROJECTS

Implementation of this strategy cannot be done by the individual institutions, but requires coordinated area-wide action, under MASCO direction. The improvements proposed are in the public environment, and are of benefit to all area institutions and users. Their implementation must involve the responsible public agencies, in particular Boston's Traffic and Parking Commission and the Metropolitan District Commission, with whom initial meetings have been held to gain support for the projects. Coordination with and support from these agencies, as well as interested community groups, is important before embarking on and during detailed study and design, to ensure approval and appropriate relationships in implementation.

Action Projects

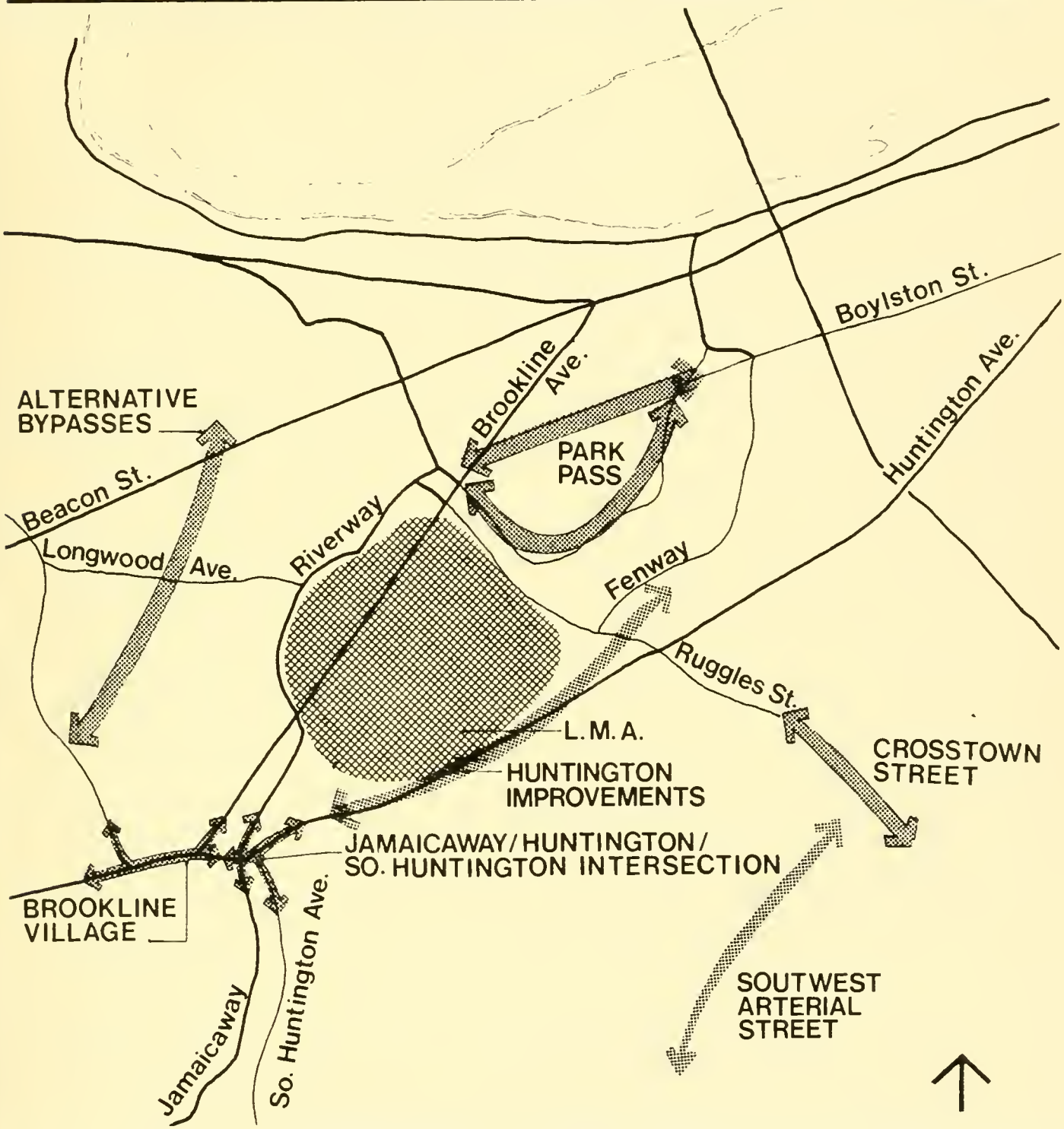
Action Projects to implement this traffic strategy include readily-achieved items for near-term implementation, and projects and issues for further study and development (see figures 1-2 and 1-3). The action projects listed below are described and specifications for their design and development are presented in the following sections of this Framework Element:

- Riverway Through Traffic Improvements
- Brookline Avenue Flow Improvements
- Access Loop
- Sign System
- Longwood Avenue Flow Improvements
- Other Projects for Further Investigation:
  - Huntington Avenue Through Traffic Improvements
  - One-Way Operating Patterns
  - Blackfan Street Extension
  - Shuttle-Bus and Transit Improvements
  - Jamaicaway/Huntington/South Huntington Intersection
  - Brookline Village Traffic.

Surrounding Area Traffic Issues

Several traffic and access issues have been raised which are in the area surrounding the LMA but have potential affects on LMA traffic patterns (see figure 1-3). Some are discussed below for information only; others present problems which warrant possible action project consideration and improvements.

- Jamaicaway/Huntington/South Huntington Intersection. This intersection at the southern tip of the LMA is a major congestion problem, limiting the



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SURROUNDING AREA TRAFFIC ISSUES

capacity and accessibility of Huntington Avenue and therefore reducing its viability as a through traffic and LMA access route. It combines an old and substandard grade-separated interchange of the Jamaicaway - the major through traffic route from the south - with the juncture of Route 9 (Boylston Street) from Brookline, South Huntington and Huntington Avenues. In addition, the MBTA Arborway trolley line tracks, operating in the middle of the street, make a sharp turn from Huntington to South Huntington in the midst of the vehicular intersection. Possible approaches to resolution of this congestion are discussed under the "Other Action Projects".

- Brookline Village Traffic. Just beyond the above intersection, along Route 9, is Brookline Village, involving the intersection of Brookline and Huntington Avenues and Washington and Boylston Streets. Congestion problems here affect outbound traffic patterns from the LMA. See the "Other Action Projects" section for further explanation and solution approaches.

- Crosstown Street (Melnea Cass Boulevard). This four-lane arterial being developed in the "Inner Belt" corridor in Lower Roxbury connects to Ruggles Street and thence to Louis Prang, the Fenway and Park Drive. It thus will provide a partial crosstown traffic alternative to Massachusetts Avenue. It will provide some improvement in access to the LMA from the southeast. Through crosstown traffic volumes on this street are hard to predict, because they will be constrained by the capacity of Ruggles and Louis Prang and the bridges near Boston University. The route is in any case at the edge of the LMA, and should not have any significant negative impacts on the area.

- Southwest Arterial Street. This is a discontinuous arterial street to be constructed in the Southwest Corridor alongside the Penn Central railroad track alignment from Forest Hills to the Crosstown Street, as part of the MBTA's relocated Orange Line project. It is not designed as a major arterial to carry through commuter traffic. Rather, it is intended to improve local circulation. The Southwest Arterial will have minimal impact on the LMA, probably limited to diversion of some traffic currently on Huntington Avenue.

- Park Pass. The "Park Pass" project is designed to shift traffic from the Fenway and its residential neighborhood to Boylston Street, and to permit direct through two-way traffic on Boylston without the circuitous route for east-bound traffic through the Fens. The impact of this project will probably be constrained by congestion on Boylston, with no increase likely in overall through flows, yielding little change for Brookline Avenue and the Riverway in the LMA. Phase One of Park Pass has been completed. One specific negative impact this has on local LMA movement is the blockage of the westbound turn upon egress from Louis Pasteur at the Fenway (already illegal, but frequently violated). Phase Two is in final stages of engi-

neering design and implementation will proceed as soon as possible.

- Alternative Bypasses. Alternative routes for through traffic from the southwest to bypass the LMA and relieve Brookline Avenue and the Riverway provide little opportunity for execution. Connections from Route 9 to the Massachusetts Turnpike/Storrow Drive distribution system, west of the LMA, are constrained by the lack of through routes and residential character of the street network in Brookline, and the lack of connection points to the Turnpike or Storrow Drive. The only major bypass to the east of the LMA would have been the Southwest Expressway. Improvements to the Huntington Avenue and Riverway through traffic routes are more likely to be successful.

Action Project: RIVERWAY THROUGH TRAFFIC IMPROVEMENTS

Project Number: 1981-1

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

Traffic studies and design engineering for the near-term improvements were begun in September 1981, for completion by March 1982. Construction is projected for the spring and summer of 1982.

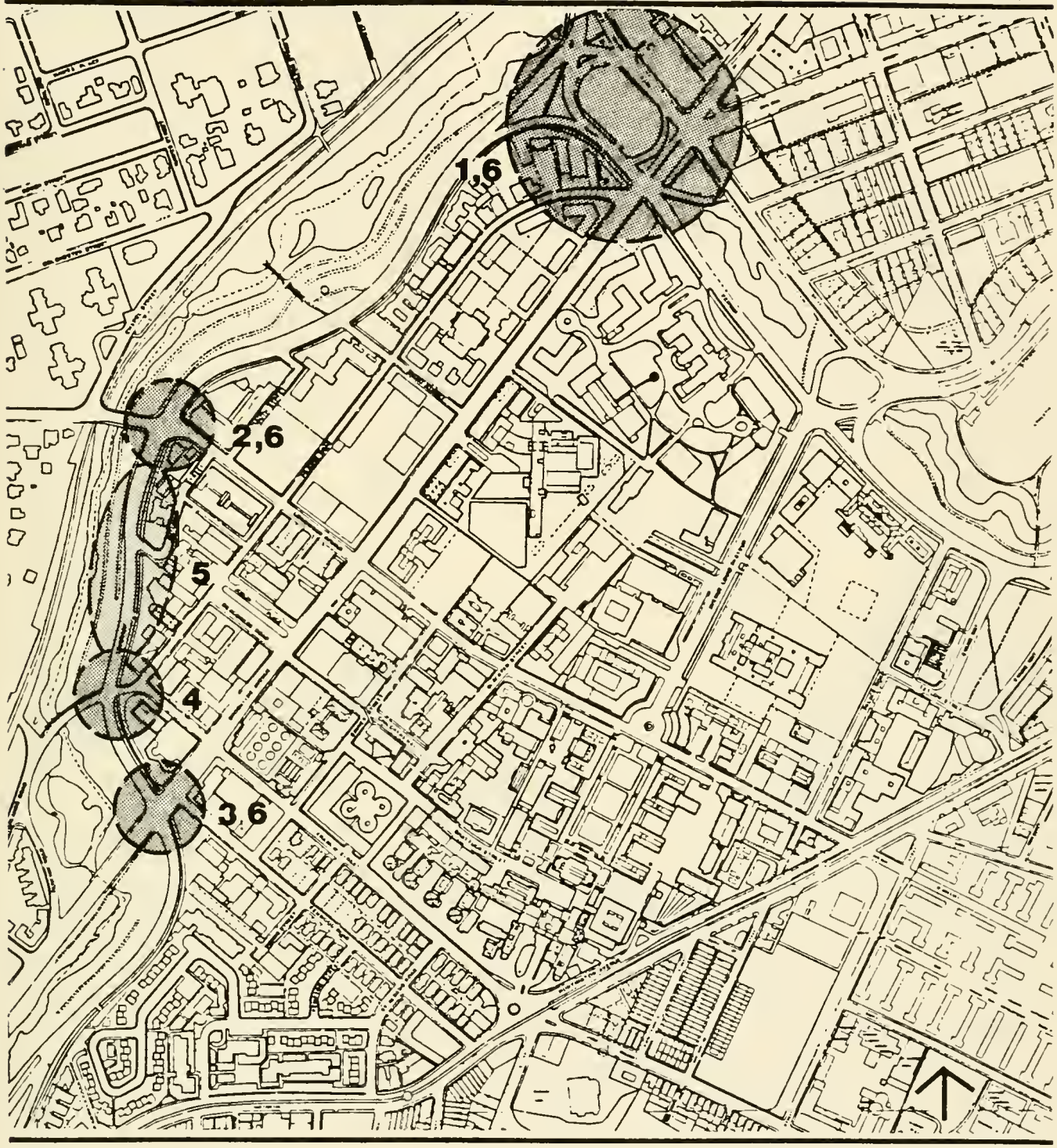
Project Description:

Design Concept. It is inevitable that a substantial through traffic flow must be accommodated in the Riverway - Brookline Avenue corridor, even though efforts be made to encourage through traffic to use other route systems. Excessive through traffic on Brookline Avenue in the LMA congests this roadway and interferes with its distribution function for the institutions of the area. It also increases hazards to pedestrians crossing at various points. On the other hand, the Riverway is logically located and of sufficient capacity to absorb diversion of substantial portions of the through traffic from Brookline Avenue between its intersection with the Fenway on the north and with Brookline Avenue on the south. While it is not practical to prohibit access to Brookline Avenue, the desired result can be accomplished by improving the desirability of the Riverway for through traffic movements, thereby causing voluntary diversion of those who will use it. The following near-term and long-term improvements are intended to achieve this objective.

Near-Term Project Scope. Improvements shall be made in the Riverway to encourage its usage by installing or revising all the following (see figure 1-4):

1. Simplify intersection flows and encourage diversion to the Riverway by operating Brookline Avenue one-way northbound between the Fenway and Park Drive, and requiring all southbound traffic to circle the "Sears" parking lot (see figure 1-5).

   This rotary pattern of operation can be implemented as a field test while



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KEY

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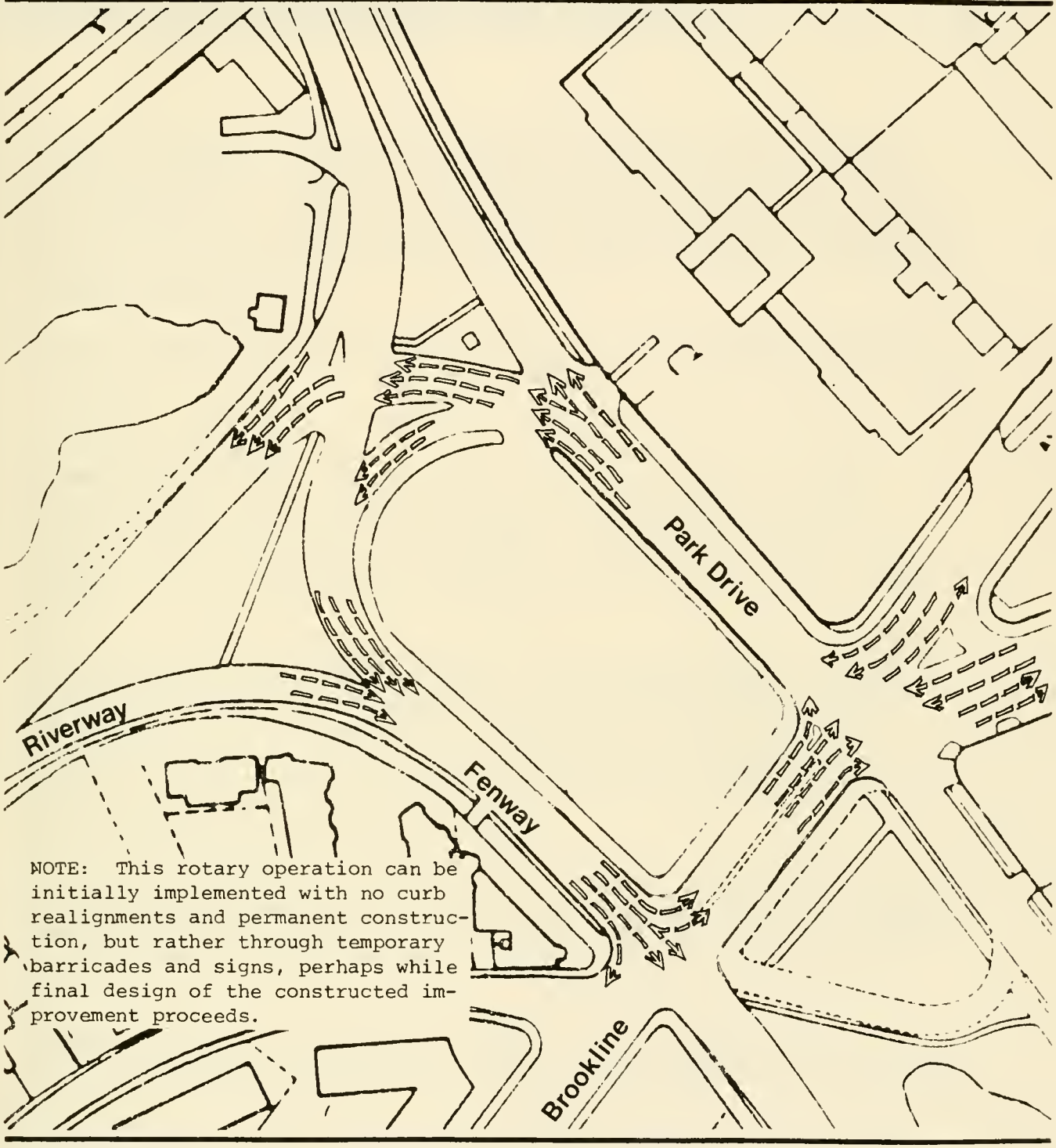
RIVERWAY THROUGH TRAFFIC IMPROVEMENTS:
FOREGROUND PROJECT ELEMENTS

1 Fenway-Brookline Rotary
2 Riverway-Longwood Intersection
3 Riverway-Brookline Intersection
4 Netherlands Road Intersection
5 Clarify Lane Operations
6 Traffic Signal Timing



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RIVERWAY THROUGH TRAFFIC IMPROVEMENTS:

FENWAY-BROOKLINE ROTARY

design of permanent improvements proceeds, assuming agreement has been reached with the MDC and City of Boston to implement permanent construction improvements. Permanent improvements should include removal of the median in the indicated block of Brookline Ave., realignment of curbs to ease turn movements and accommodate traffic lanes, provision of left turn slot to Park Drive westbound and closure of present turn slot, and related signing and marking.

Adjust traffic signal timing at Park Drive and the Riverway to encourage major flows from Boylston Street southbound to continue southbound on the Riverway.

2. Revise traffic signal phasing, timing and channelization at Longwood Avenue and the Riverway to encourage through movements and to avoid delays by providing a two-lane left turn northbound via one exclusive turn lane and one optional turn lane from the Riverway to Longwood Avenue. Study, and implement if feasible, reversible operation of the center lane of Longwood between Riverway and Chapel Street (see figure 1-6).

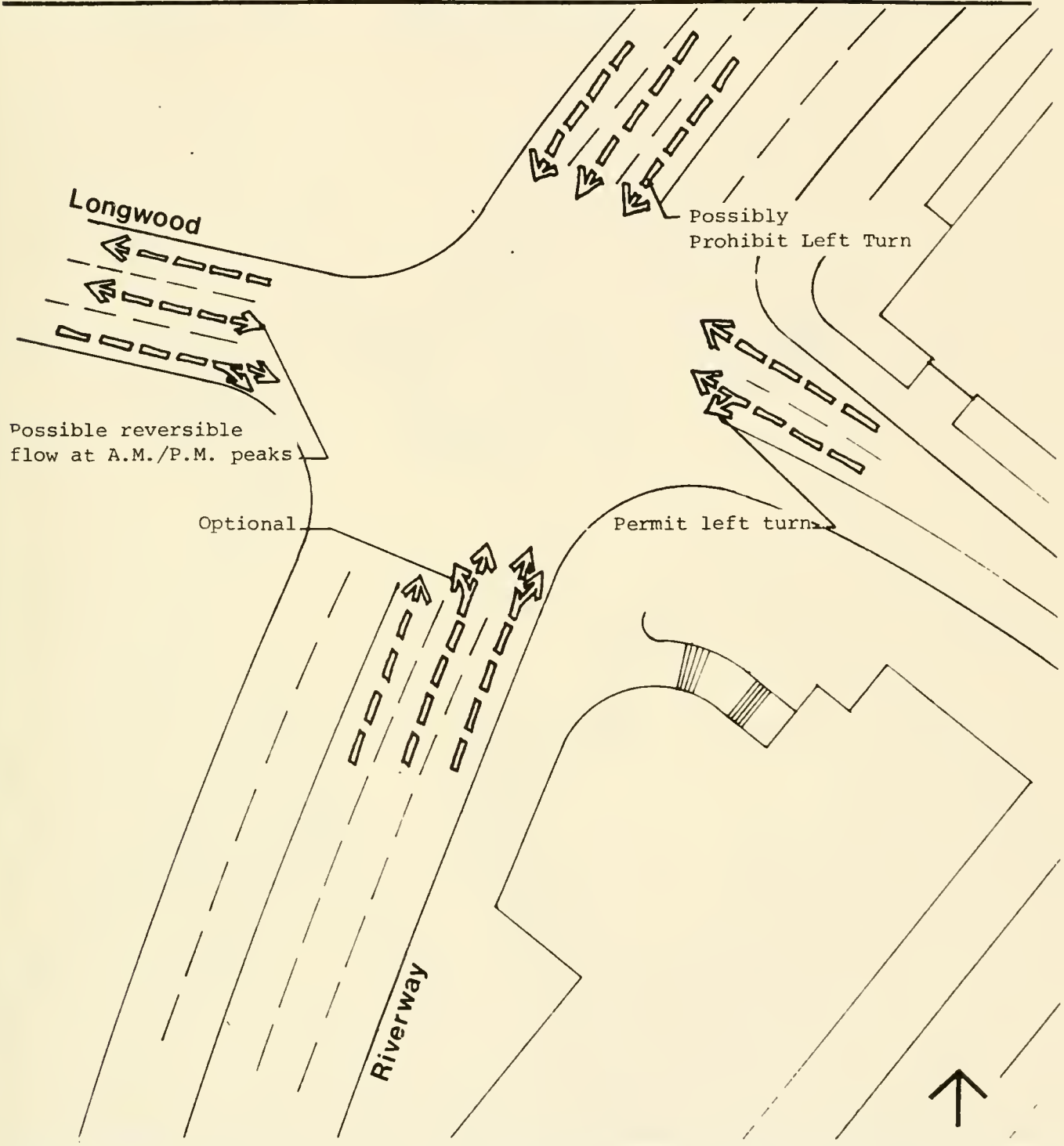
   Study, and implement if justified, prohibition of southbound left turns from the Riverway to Longwood Avenue. This prohibition would eliminate the interference of turning traffic crossing northbound flows, which presently is one of the significant constraints on the through-traffic carrying capacity of the Riverway. This advantage must be weighed against the access limitation to LMA institutions via Longwood - access which should be better served from the north by the improved traffic flow on Brookline Avenue from Park Drive.

   Consider, and implement if feasible, construction of an island in the median of the Riverway on the north side of this intersection, to provide improved pedestrian safety for crossing the Riverway. This is a particularly important crossing for access from the Longwood MBTA station to the LMA.

   Permit westbound left turns from Longwood to the Riverway. These are currently frequently made although illegal. This movement is an important egress pattern from the LMA.

3. Realign lanes and signal displays at Brookline Avenue and the Riverway to provide two through lanes northbound on the Riverway, and to eliminate or limit the preferential right turns northbound on the Riverway onto Brookline Avenue. Also, provide exclusive left turns from Brookline Avenue northbound to the Riverway northbound (see figure 1-7).

4. Prohibit crossings and left turns at Netherlands Road and the Riverway,



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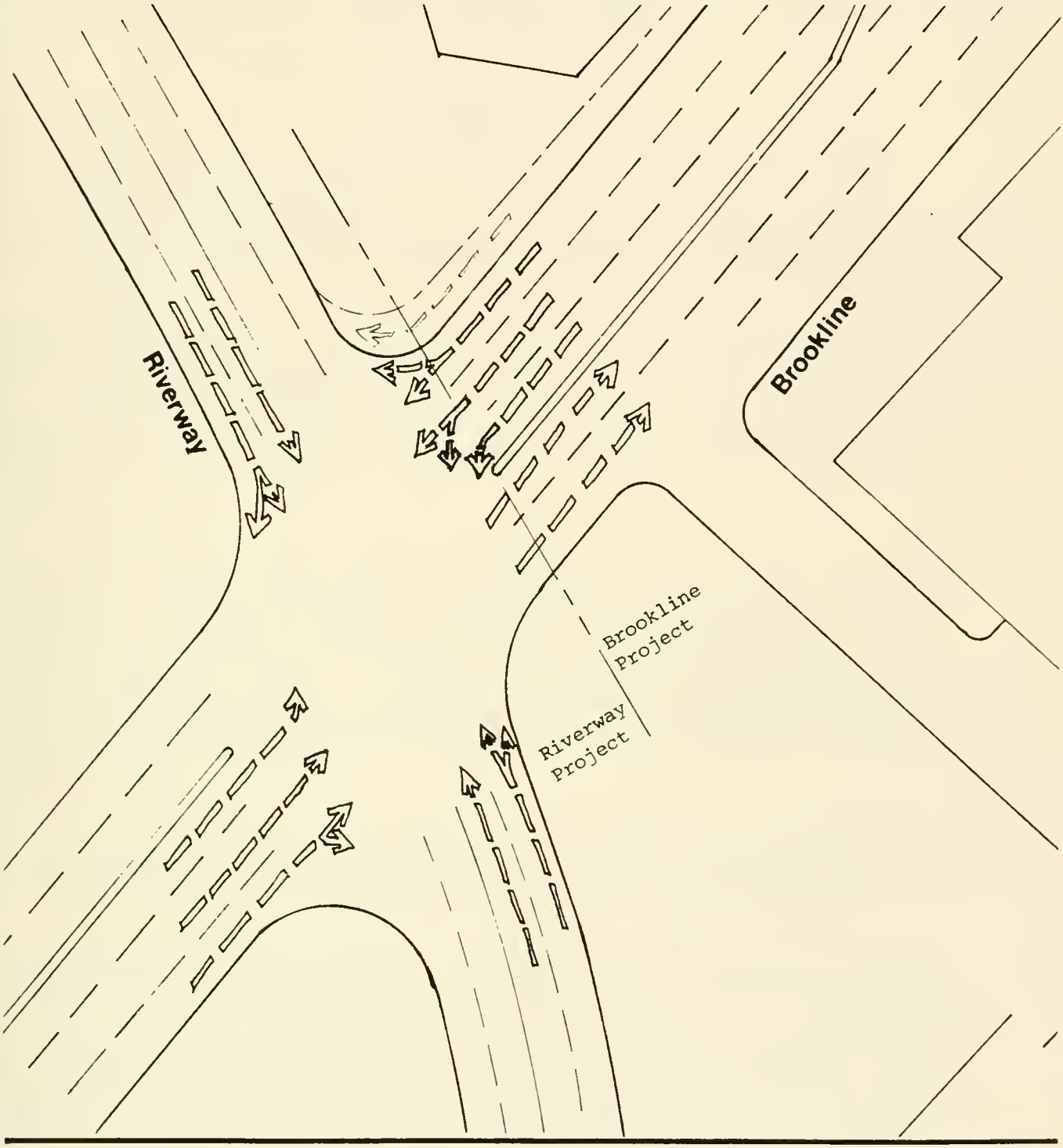
RIVERWAY THROUGH TRAFFIC IMPROVEMENTS:

RIVERWAY-LONGWOOD INTERSECTION



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RIVERWAY THROUGH TRAFFIC IMPROVEMENTS:

RIVERWAY-BROOKLINE INTERSECTION

employing a raised median strip if feasible.

5. Clarify lane operations northbound in the area between Netherlands Road and Longwood Avenue.

6. Coordinate traffic signal phasing and timing for smooth and preferential flow northbound in the morning peak hour and southbound in the evening peak hour.

Design Specifications. The recommended work is to be accomplished by a traffic engineering study and design firm. The firm should be retainted to: (a) estimate turning movement patterns resulting from the suggested improvements based on existing traffic flows and the resultant diversion and, (b) prepare design plans including signal phasing, timing, lane markings, median treatment, turn restrictions, parking controls and any other regulations which may be required.

The firm shall be instructed that no pavement reconstruction or major widenings and no complete replacement or relocation of traffic signal equipment is to be included. If such things appear desirable, they are to be presented as recommendations for long-term improvements. The required studies should be limited to a description of the improvements, the anticipated costs and expected immediate results. The design plan should provide contract documents and specifications for installation. All of the work should be predicated on consultation and approval by the Metropolitan District Commission, and to such extent as may be necessary, the Commissioner of Traffic and Parking of the City of Boston.

To maintain continuity, the same firm should be used for both the study and design assignments. It would also be preferable for the same firm to be assigned the Brookline Avenue Flow Improvements and Access Loop projects, and for these assignments to proceed concurrently, for best coordination.

Long-Term Improvements. The above near-term scope suggests some items which could be implemented immediately or could be delayed, and some which should be held for longer-term implementation. The reconstruction of Brookline Avenue between Fenway and Park Drive, including removal of the concrete median and curb reconstruction to accommodate turn slots and new travel lanes, would be desirable to include in the near-term project but could, if necessary, be delayed to a later phase. Curb and pavement reconstruction to channelize the Brookline/Riverway and Longwood/Riverway intersections, install a median at Netherlands Road, and implement minor widenings to facilitate certain turn movements, are likely longer-term improvements, depending on the results of the immediate design studies.

Implementation Efforts Required. The MASCO administration has hired the

engineering design consultant indicated, based on the above scope, and has begun other steps toward implementation. Initial meetings with MDC and City of Boston engineers, planners and police have been held, to gain their support for the project. The support of these agencies, as well as of community and other nearby institutional interests, is important, to avoid political problems later at the time of official approval. Implementation and funding relationships between MASCO and the MDC must be negotiated. The consulting engineer should work with MDC technical personnel during the study and design process. Upon completion of engineering designs, MASCO must petition for final approval by the MDC Commissioners for implementation.

Action Project: BROOKLINE AVENUE FLOW IMPROVEMENTS

Project Number: 1981-2

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

Traffic studies and design engineering for the near-term improvements were begun in September 1981, for completion by March 1982. Construction is projected for the spring and summer of 1982.

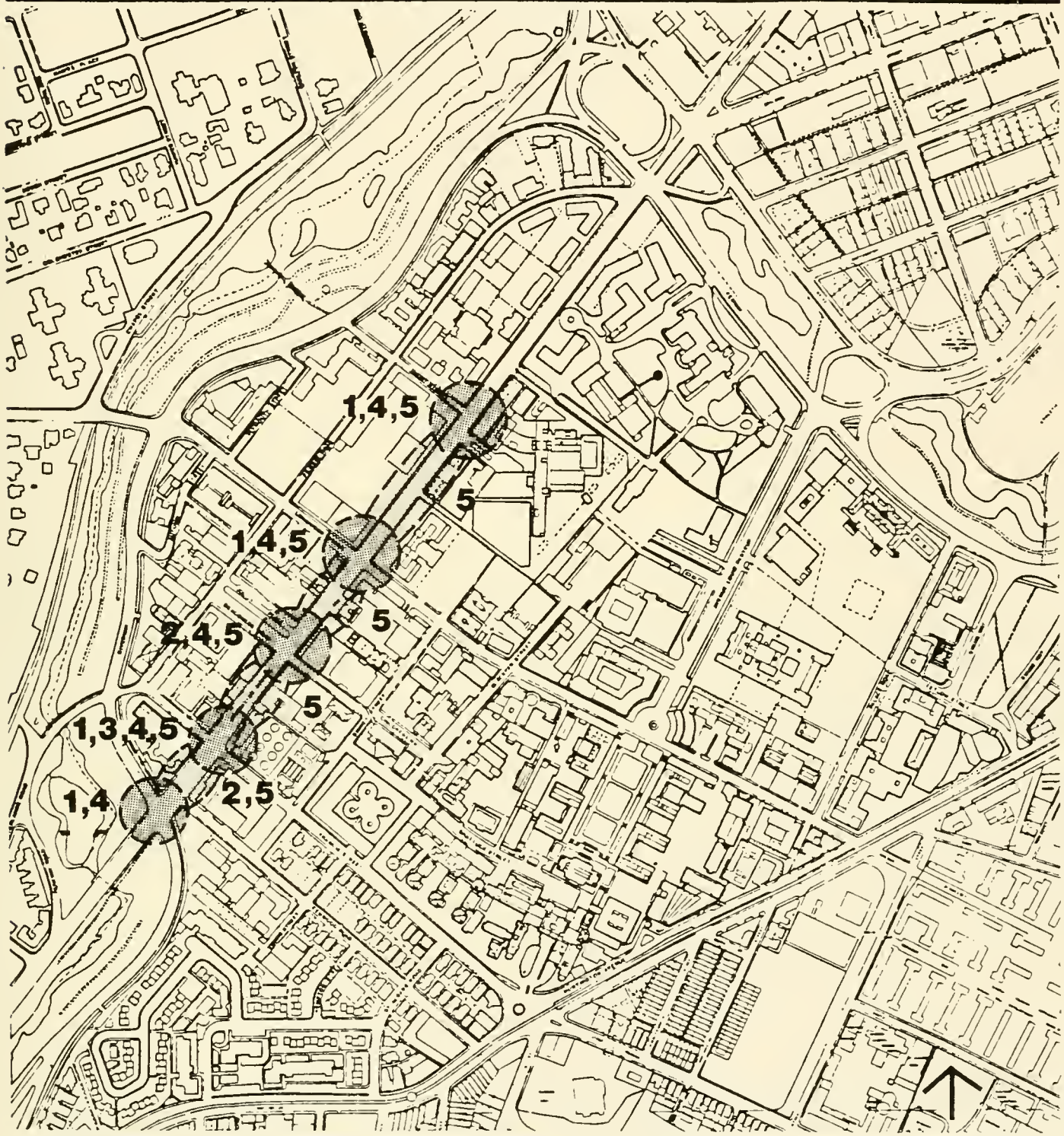
Project Description:

Design Concept. Even though substantial through traffic movement may be diverted from Brookline Avenue to the Riverway and other arterials through other action projects, various traffic flow problems will remain between the intersection of Brookline with the Fenway on the north and the Riverway on the south. These will continue to be an irritant to workers and visitors in the Longwood Medical Area. Brookline Avenue is the major access route to and from the various entrances and parking facilities in the area. The smoother it operates, the better for all concerned. The following improvements are intended to smooth traffic flows and reduce hazard within the defined limits to the greatest extent possible.

Near-Term Project Scope. The improvements to be designed are as follows (see figures 1-8 and 1-9):

1. Provide painted or raised medians, or left-turn lanes, as appropriate, based on a 13-12-10-12-13 configuration of the 60-foot curb-to-curb roadway approaching the intersections of Brookline Avenue and Francis Street, Longwood Avenue and Short Street, adjusted for existing street width variations. Four-lane vs. two-lane operation should be provided in the widened street from Francis to the Riverway, as shown in figure 1-9, with lane alignments coordinated with improvements to the Brookline/ Riverway intersection included in the Riverway Action Project.

   Lane configuration must be designed to accommodate the proposed long-



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KEY

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BROOKLINE AVENUE FLOW IMPROVEMENTS:

FOREGROUND PROJECT ELEMENTS

1 Left Turn Stack Lanes

2 Left Turn Prohibitions/Medians

3 New Traffic Signal

4 Traffic Signal Timing

5 Parking Restrictions

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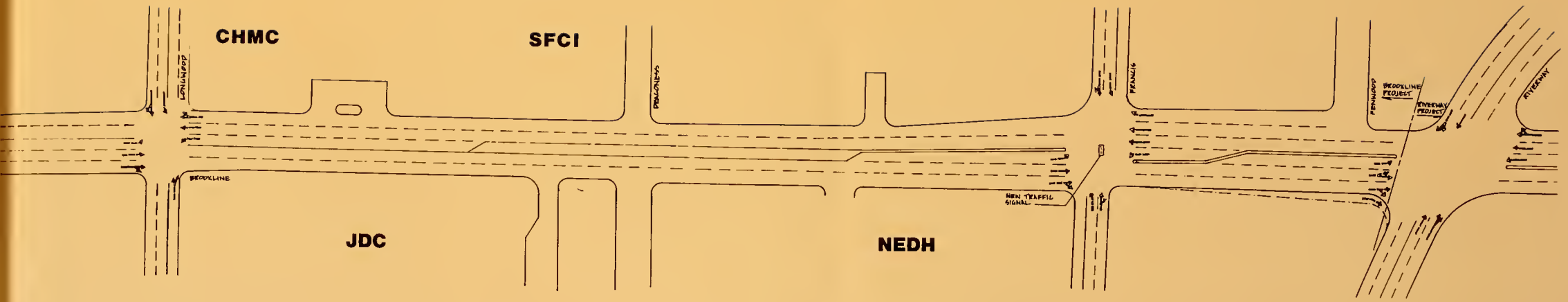
BROOKLINE AVENUE FLOW IMPROVEMENTS:

TRAFFIC PATTERN

26 October 1981


CHMC
SFCI
JDC
NEDH
BROOKLINE
NEW TRAFFIC SIGNAL
BROOKLINE PROJECT
RIVERWAY PROJECT
RIVERWAY

term traffic pattern and access loop operation, as described in the Access Loop Action Project and figure 1-12, even if the near-term situation is at variance. Study the possibility of prohibiting left turns from Brookline northbound to Short Street, to accommodate the more active left turn from Brookline southbound to the Beth Israel Hospital entrance.

2. Provide raised medians across the intersection of Brookline Avenue with Deaconess Road and Joslin Place, and with Fenwood Road, with allowance for emergency vehicle crossings. This will restrict all general movements at these locations to right turns, and eliminate the interference with smooth traffic flow of vehicles turning left across on-coming traffic. This should significantly decrease congestion and delays in traffic movement along Brookline Avenue. Traffic to institutions currently accessed from these streets (JDC, NEDH, SFCI and Mass. Mental Health Center) will be directed to turn at Longwood or Francis, as appropriate to the direction of approach and institutional location, for quickest routing via the Access Loop (see Access Loop Action Project for explanation of operation and directions of flow).

   The median will also provide a safety zone for pedestrian crossings. This is especially important at the intersection of Brookline and Deaconess, where pedestrian crossings are currently concentrated, and will be reenforced in the future by the proposed Shattuck-Deaconess Mall.

3. Provide new traffic signal at Francis Street.

4. Coordinate traffic signal phasing and timing for smooth and preferential flow northbound from the Riverway intersection in the morning peak hour and southbound from the Short Street intersection in the evening peak hour. The timing relationship to the Fenway signal is less important and should depend on the outcome of the remainder of the plan. Effective implementation of this improvement requires coordination of MDC and City of Boston signal systems and police-directed traffic operations.

   Signals at Deaconess Road and Short Street/Beth Israel entrance should operate as full vehicular traffic control signals, with accommodation of pedestrian crossing movements through push-button controls and timed cycles.

5. Limit on-street parking on Brookline Avenue from the Riverway to Short Street, as required to make the above flow improvements operate effectively. Provide signing, marking and regulatory plans for the project area for the required parking prohibitions.

Design Specifications. The required work is to be carried out by a traffic engineering study and design firm. It is best to use the firm assigned to the Riverway Improvements and Access Loop projects, and the assignments should proceed concurrently. Separate contracts are recommended, however, because the Riverway assignment is almost entirely involved with the Metropolitan District Commission and the Brookline Avenue and Access Loop assignments are almost entirely involved with the City of Boston Department of Traffic and Parking.

The firm selected for this assignment shall be instructed to conduct a traffic analysis of all affected intersections to ensure workability of proposed improvements, to accommodate the remaining volumes and turning movements to be handled after implementation of the Riverway Through Traffic Improvements project.

All traffic changes are to be accomplished within the existing curb-to-curb roadway of Brookline Avenue, with minor exceptions as indicated in figure 1-9. Traffic signal installations are not to be replaced or relocated at the Riverway, Longwood Avenue, Short Street or the Fenway except to the extent needed for added phase or lane controls. A new traffic signal installation is to be planned and designed at Francis Street. The design plan shall provide contract documents and specifications for all parking regulations, signs, markings, signal phasing and timing and all physical construction such as the median across the face of Deaconess Road, the median between the Riverway and Francis Street, and any other median sections that may be specified.

The consultant firm shall coordinate all design engineering with the Riverway and Access Loop projects, as appropriate. Existing studies and designs for widening and improvements to Brookline Avenue, produced by Edwards & Kelcey and Raymond, Parish & Pine, consultants to the City of Boston, shall be utilized and reused to the maximum extent feasible. All improvements shall be predicated on consultation with and concurrence of the Commissioner of Traffic and Parking of the City of Boston.

Long-Term Improvements. The above improvements provide a complete and workable solution to Brookline Avenue traffic flows. Further improvement could be achieved by widening the Brookline Avenue roadway at the intersections with Longwood Avenue, Francis and possibly the Riverway to provide exclusive right-turn lanes (see figure 1-12, in comparison with figure 1-9). These further improvements require curb and sidewalk modifications which should be implemented in coordination with redevelopment of the adjacent building parcels.

Implementation Efforts Required. The MASCO administration has hired an engineering design consultant, based on the above scope, and has begun other steps toward implementation. An initial meeting with the Deputy Commissioner of Traffic and Parking of the City of Boston, and with City Public Works and BRA planners and engineers has been held to gain support for the project. Implementation and funding relationships between MASCO and the City must be negotiated.

The design engineer should coordinate with Boston Traffic and Parking engineering personnel and other city agency representatives, as appropriate, through the design process. Final approval for implementation must be granted by the Commissioner of Traffic and Parking and the City of Boston Public Improvements Commission. Achievement of the operating goals of this project also requires effective traffic and parking regulations enforcement, which MASCO should work with Boston Police representatives to ensure.

Action Project: ACCESS LOOP

Project Number: 1981-3

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

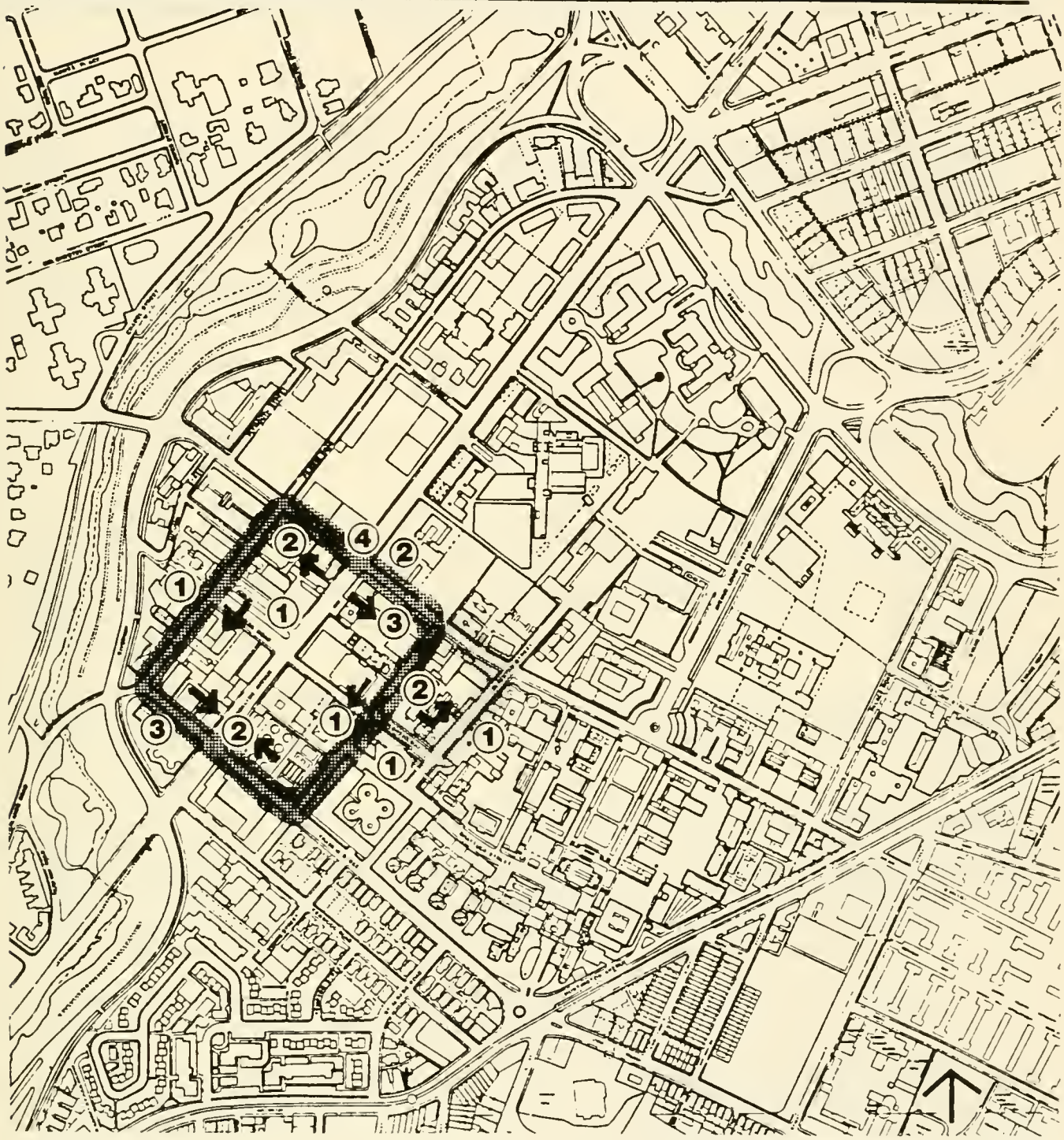
Traffic studies and design engineering for the near-term improvements were begun in September 1981, for completion by March 1982. Construction is projected for the spring and summer of 1982.

Project Description:

Design Concept. A clearly discerned and easily followed route and destination system is essential to the "first time or hardly ever" visitor to the LMA. The numerous hospitals, clinics, schools and other institutions naturally attract many first time visitors, and the individual institutions are hard to distinguish from citywide or regional maps or directions. This project is intended to implement a basic access system, using the existing street network, properly signed and operated. The simplified movement pattern will provide more comprehensible orientation and thus reduce driver confusion and hesitation. It will also reduce conflicting crossing movements at key intersections, yielding smoother area traffic operations.

The Access Loop is designed to directly serve five of the six main area hospitals (SFCI, CHMC, BWH, NEDH and JDC), and to clarify the most congested traffic core of the LMA. The primary loop area includes Longwood Avenue, Binney Street, Francis Street and Pilgrim Road, with a sub-loop on Children's Way, Blackfan Street and Longwood (see figure 1-10). The key concept of the loop operation is to provide direct, conceptually clear access to the institutions' main and emergency entrances, and to provide access to a succession of parking garage opportunities, preferably in sequence after the main hospital entrance.

It should be emphasized that the Access Loop provides direction and simplified access for unfamiliar drivers. It does not require all drivers to follow the loop direction. Reverse movements are retained on Access Loop streets remaining as two-way, and alternative access patterns are available to all the institu-



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ACCESS LOOP:
NEAR-TERM IMPROVEMENTS

KEY

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1 ONE-WAY STREET OPERATION

2 SIGNING AND MARKING

3 LONGWOOD/FRANCIS STREET WIDENING

4 PRIMARY ENTRY POINT TO LOOP

tions. Accustomed drivers may continue to use alternative routes. Thus the Access Loop streets and intersections will not be overloaded with significant additional traffic, but access will be clarified and simplified for those in need of assistance to reach the institutions. This should reduce delays and potential congestion on the area streets.

Near-Term Project Scope. The project will consist of a near-term operational solution primarily comprising a pair of loops as follows (see figure 1-11):

Loop 1: clockwise around the blocks enclosed by Brookline Avenue, Longwood Avenue, Binney Street and Francis Street.

Loop 2: counterclockwise around the blocks enclosed by Brookline Avenue, Longwood Avenue, Pilgrim Road and Francis Street.

In this plan, Binney Street and Pilgrim Road will operate one-way southbound. Longwood and Francis will remain two-way. CHMC will be served by a sub-loop running eastbound and northbound off Binney Street via Children's Way and Blackfan Street (direction possibly reversed, subject to discussion with CHMC). Access to JDC will be off Pilgrim via Joslin Place, running eastbound to Brookline Avenue.

Primary entry to the Access Loop in this near-term operation will be from Brookline Avenue at Longwood. However, signing will provide information for entry to the loop at all points of intersection with traffic flows on Longwood, Francis and Brookline.

Curb-parking on one side should be retained for as much of the affected length of Pilgrim Road and Binney Street as possible. Information, direction, hospital entrance and parking signs, essential to the clear communication and operation of the Access Loop, will be implemented as part of the Sign System Action Project. The signing will accommodate the fact that Beth Israel Hospital is outside of the loop area.

Implementation of this near-term Access Loop operating pattern involves the following improvements (see figures 1-10 and 1-11):

1. Convert to one-way operation, or reverse direction, in accord with the indicated pattern, the following streets: Binney, Children's Way, Blackfan, and Joslin Place.

2. Install appropriate street traffic and parking control signing and marking.

3. Widen Longwood Avenue between Brookline and Binney to create an added eastbound lane for loop movement, within sidewalk area reserved for this at the time of construction of the Children's Inn. Some widening will probably

1-11

ACCESS LOOP:

NEAR-TERM OPERATION

26 October 1981

ACCESS LOOP ENTRY POINT
LONGWOOD AVE
PILGRIM RD
JOSLIN DIABETES CENTER
NEW ENGLAND DEACONESS HOSPITAL
BROOKLINE AVE
SIDNEY FARBER CANCER INSTITUTE
BINNEY ST
DEACONESS RD
BLACKFAN ST
CHILDREN'S HOSPITAL MEDICAL CENTER
BRIGHAM AND WOMEN'S HOSPITAL
ACCESS LOOP ENTRY POINT
FRANCIS AVE
P
E
H

also be required on Francis Avenue between Pilgrim and Brookline to accommodate two moving lanes in the direction of flow of the Access Loop and one in the reverse direction.

Design Specifications. The work to be carried out by a traffic engineering firm includes:

1. Analyze expected operations of all driveways, loading areas, bus cut-outs, turn movements and curb-side usage along the loop system.

2. Evaluate traffic flow changes resulting from one-way southbound operation of Binney Street and other one-way modifications, and from widening of Longwood Avenue.

3. Recommend any modifications to Access Loop operating pattern and street configuration as a result of the above analyses.

4. Design and specify all traffic and parking control signs and markings throughout the pair of access loops and immediately affected area.

5. Design and specify all essential physical construction involved in widening of Longwood Avenue to provide an additional eastbound lane, and similarly to Francis Avenue between Pilgrim and Brookline, as necessary. This will involve replacement of pavement and curbing, and relocation or removal of manholes, catch basins, fire hydrants, street lighting, signal poles, signs, parking meters and other sidewalk equipment, as necessary. Drainage and contour changes should be kept to a minimum, and no changes in underground networks are anticipated. Sidewalk shall be restored to current condition to the new curb alignment.

The required studies should be limited to a description of the improvements, anticipated costs, and the expected immediate results. The design plans shall include contract documents and specifications for installation of all essential improvements. No changes to traffic signal systems are to be included.

The Access Loop improvements shall be coordinated with the design engineering for the Brookline Avenue Flow Improvements project, and with the Sign System development and implementation. It would be desirable for the Access Loop and Brookline Avenue projects to proceed concurrently and to be designed by the same engineering firm, for best coordination. Implementation of the Sign System Action Project should also proceed concurrently, if possible, to provide information necessary to Access Loop operation. All improvements shall be predicated on consultation with and concurrence of the Commissioner of Traffic and Parking of the City of Boston.

Long-Term Operation. When, in the near future, NEDH develops the Harris Hall

site and provides a new main entrance across the street from its present one, the direction of all traffic on Pilgrim Road and the flow of that half of the loop should be reversed to provide a single, complete clockwise loop (see figure 1-12). This continuous pattern would be conceptually clearer and operate even more effectively, further reducing traffic conflict points in this area. Some additional roadway widening on Pilgrim, adjacent to the Deaconess garage, is required to permit a short counter-flow lane from Longwood to Crossover Street, for access to the garage.

When JDC develops its site at the corner of Pilgrim and Longwood providing a new entrance pattern, Joslin Place and Deaconess Road (the streets on either side of Joslin Park) can be closed, expanding the green open space. Similarly, when development of the block south of the Dana Center is completed, Deaconess Road there can also be closed to traffic, as part of the Shattuck-Deaconess pedestrian mall. Removing these short streets and their intersections with the loop will further simplify the access pattern, reducing the number of vehicular conflict points and improving area traffic flow.

Bus Routing and Pedestrian Focus. To reinforce the access loop concept, all MASCO shuttle bus routes should be directed around the loop as their LMA "terminus." In the near-term, buses should operate around clockwise Loop 1; in the long-term they should circle the entire loop from Binney to Pilgrim. This will support the identification of the loop as the focal access pattern and the place for people to go for transit and traffic services. Future access and movement-related services - such as new bus routes, and pedestrian or driver information kiosks - should also be located along the Access Loop.

Implementation Efforts Required. The MASCO administration has hired an engineering design consultant, based on the above scope, and is proceeding with other steps toward implementation. An initial meeting with the Deputy Commissioner of Traffic and Parking of the City of Boston, and with City Public Works and BRA planners and engineers has been held to gain support for the project.

The design engineer should coordinate with Boston Traffic and Parking engineering personnel and other city agency representatives, as appropriate, through the design process. Final approval for implementation must be granted by the Commissioner of Traffic and Parking and the City of Boston Public Improvements Commission. Achievement of the operating goals of this project also requires effective traffic and parking regulations enforcement, which MASCO should work with Boston Police representatives to ensure.

1 - 12

ACCESS LOOP:

LONG-TERM OPERATION

'6 October 1981

ACCESS LOOP ENTRY POINT
LONGWOOD AVE
P
E
PILGRIM RD
JOSLIN DIABETES CENTER
H
BLACKFAN ST
BINNEY ST
E
SIDNEY FARBER CANCER INSTITUTE
H
P
CHILDREN'S HOSPITAL MEDICAL CENTER
H
NEW ENGLAND DEACONESS HOSPITAL
BROOKLINE AVE
DEACONESS RD
H
E
BRIGHAM AND WOMEN'S HOSPITAL
H
ACCESS LOOP ENTRY POINT
P
FRANCIS AVE
P

Action Project: SIGN SYSTEM

Project Number: 1981-4

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

Concept design of the overall sign system is to begin before the end of 1981. Final design of the vehicular system for the medical institutions will follow immediately to permit implementation in the Spring-to-Fall of 1982. Pedestrian Information and other vehicular systems are to follow in successive years.

Project Description:

Orientation information and institutional identification in the Longwood Area is currently woefully inadequate and uncoordinated. The area itself is hard to locate and the lack of apparent physical order leaves most destinations within it hard to find. The underdeveloped information system is a source of inconvenience and frustration to area visitors, and a cause of hesitation and hazard for drivers, which compounds the traffic congestion. The Sign System proposed in this section, as part of a comprehensive Information System, is a major step toward addressing this problem. It represents a preliminary concept, the basis for further study and development, but describes a complete set of vehicular signs - from gateway to destination to entrance - for a fully operational system.

Design Goals. The underlying goals and assumptions which the LMA Sign System should be designed to meet include:

1. Coordination. Serve vehicle drivers, transit passengers, and pedestrians with information elements which are coordinated as a total system. Avoid disruptions and gaps in the information available by planning all the components as an integrated whole. Reassure both drivers and pedestrians - typically unaccustomed newcomers to the area - through signage that maintains a consistent appearance and message presentation throughout the Longwood Area.

2. Clairfication. Use the vehicular signage to reinforce the conceptually

clearest pathway to the institutions. For the medical institutions this means Brookline Avenue as "main street", together with the Access Loop linking all entrances and parking. The unique form and appearance of the sign elements themselves must signify the Area's identity and the presence of the access pathway to the motorists in the area. Signs should present a recognizable image of the Area as a cohesive entity, reinforcing the sense of place developed through the pedestrian open space improvements.

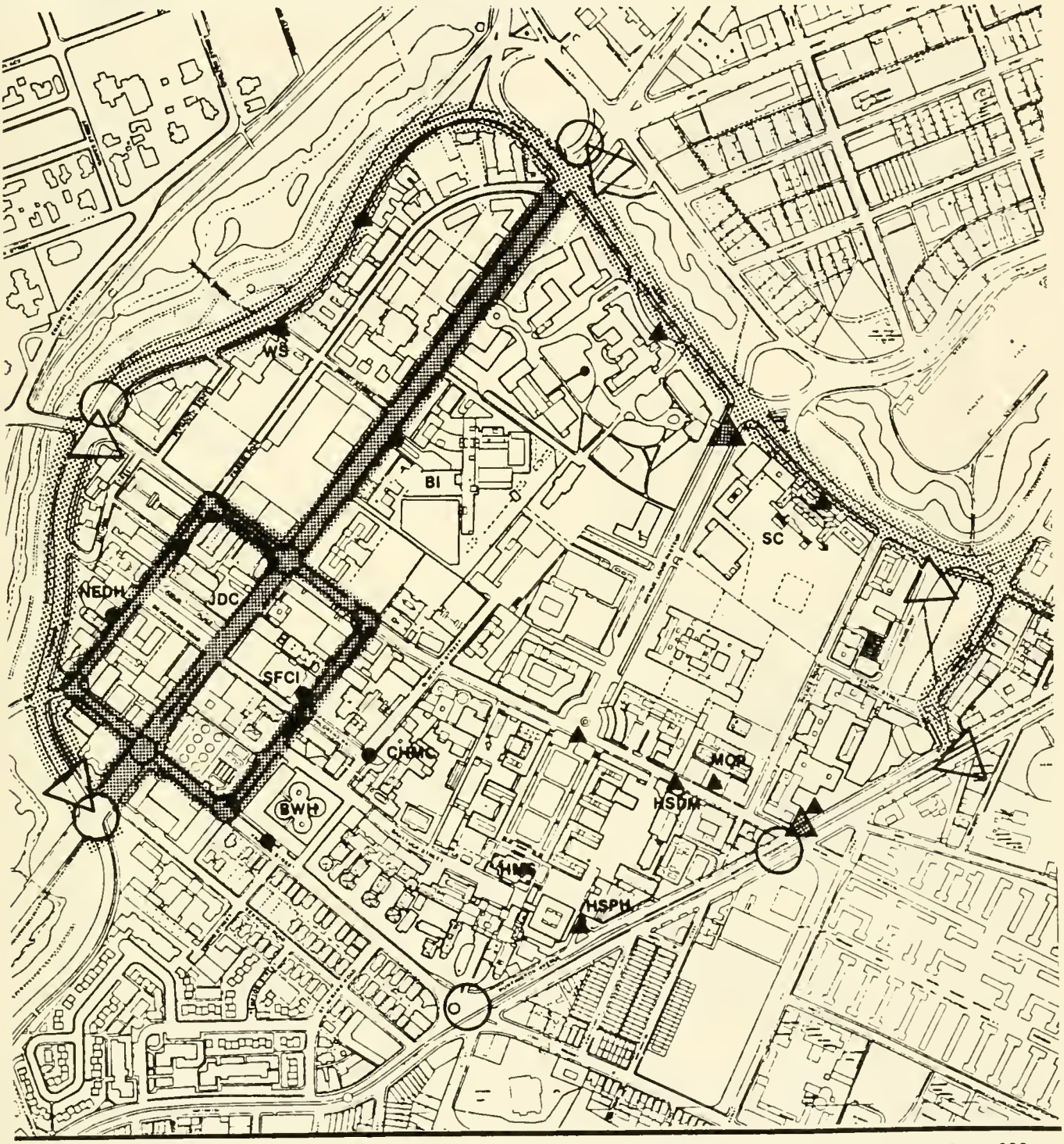
3. Conciseness. The vehicular signs should direct motorists (a) to the Longwood Area, (b) to the clearest access path, and (c) to the institutions' entrances and parking - in that order and in that priority. The signs should mark key decision points in the manner of street signs, rather than in multiple locations as with highway signs. This approach will minimize the number of signs required and simplify the identification of multiple destination points. Simplify and shorten messages; treat the information format and content consistently but avoid overloading the user with more information than he or she can read and utilize. Use standardized graphics, color, logos and pictograms for easier communication.

4. Completeness. For the pedestrian, who can control the amount of time applied to information gathering, provide a thorough system of information components located regularly throughout the major outdoor and indoor spaces of the whole Longwood Area. These components should locate transit and parking, institutions, services and amenities, and sources of further information.

Design Concept. The proposed Sign System concept is represented in a location plan in figure 1-13 and illustrative studies of possible sign formats and construction in figures 1-14 and 1-15 (these illustrative designs are meant to be suggestive only, and not to limit the range of possibilities to be considered in concept development). The proposed concept consists of the following design considerations, based on the goals stated above:

1. There will be a hierarchy of signage elements and messages, commencing at the user's entry point to the Longwood Area and proceeding to any destination. Not every possible path will be identified, but rather the conceptually clearest set of pathways.

2. Information elements for different purposes will be treated as individual systems for greatest clarity of use, but coordinated as a total information system. Specifically, pedestrian-related information will be organized as a system and located separately from vehicular directional information. Vehicular signage will be divided into two systems, one for the Longwood hospitals and related medical institutions, and one for the educational and cultural institutions in the Fenway/Riverway area.



1-13

SIGN SYSTEM LOCATION PLAN

KEY

0 200

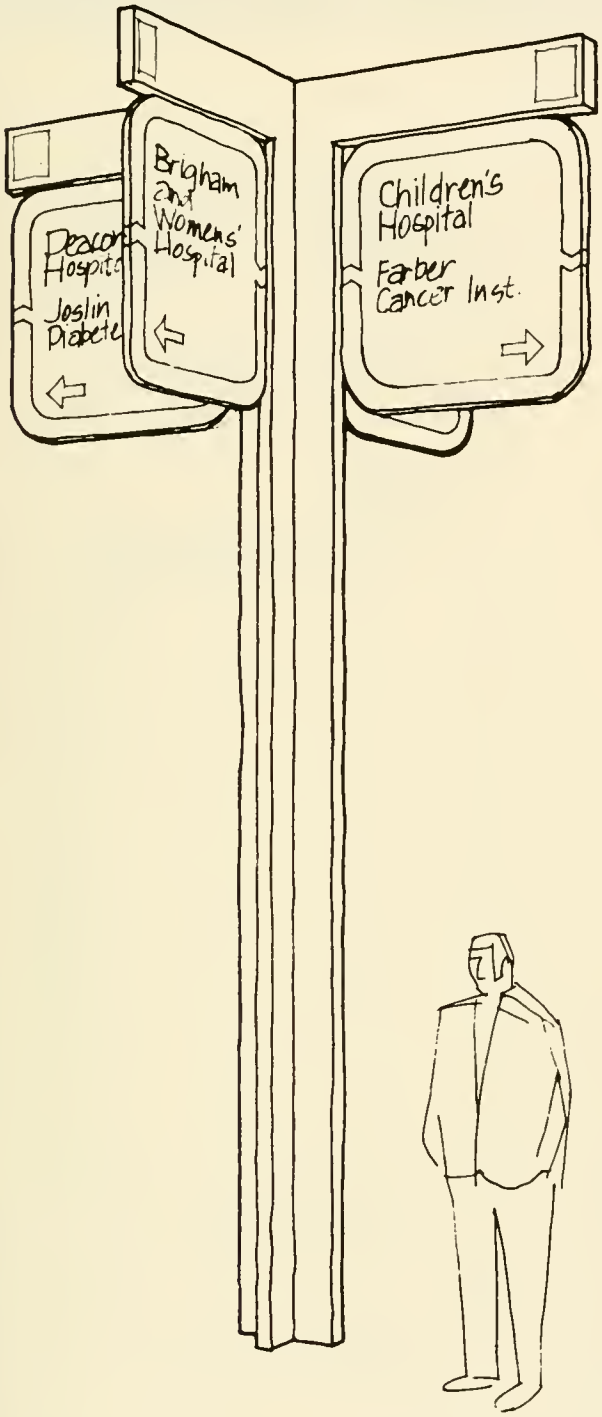
Medical Institutions

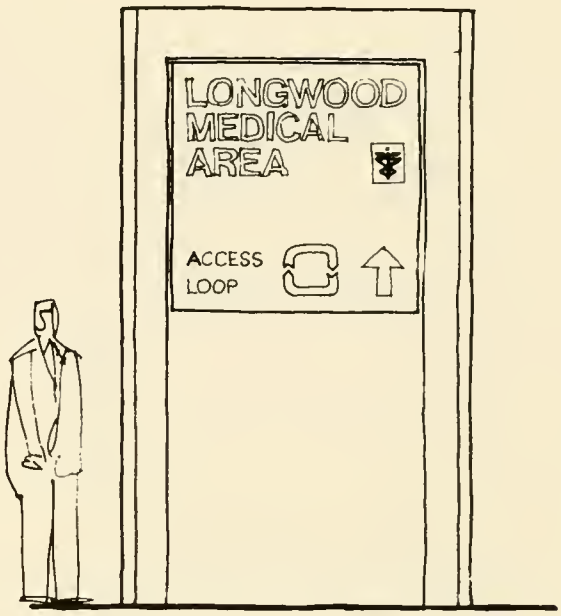
Educational/ Cultural

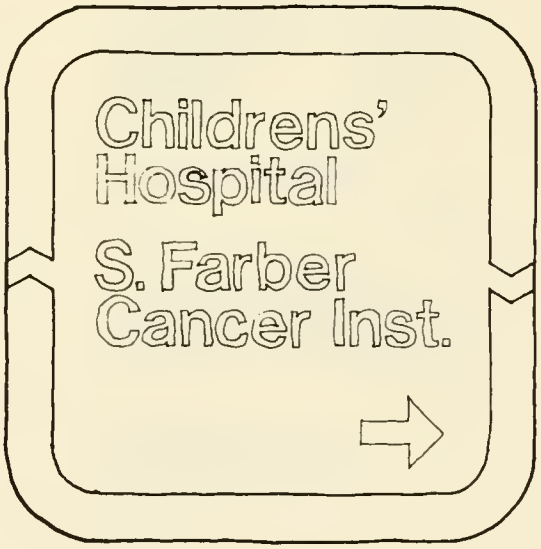
GATEWAY

DIRECTIONAL

ENTRANCE

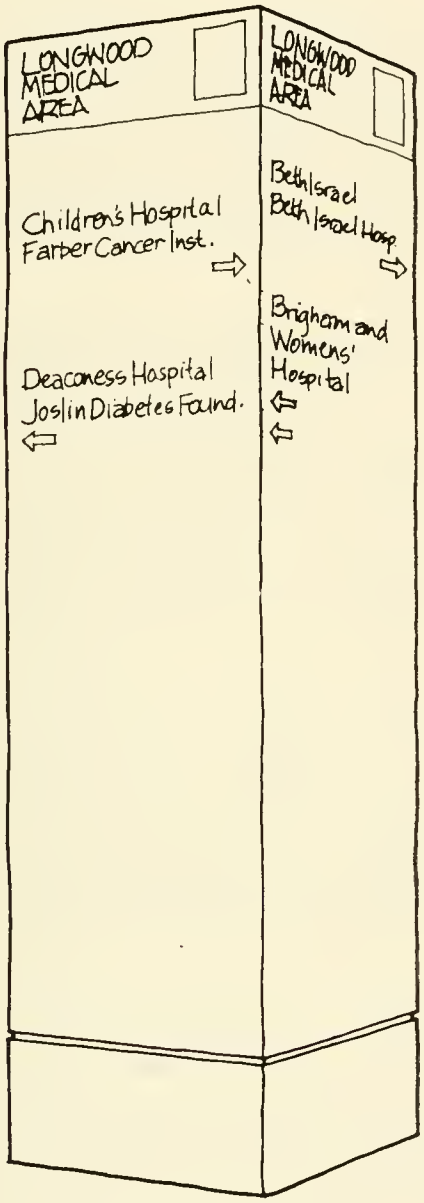


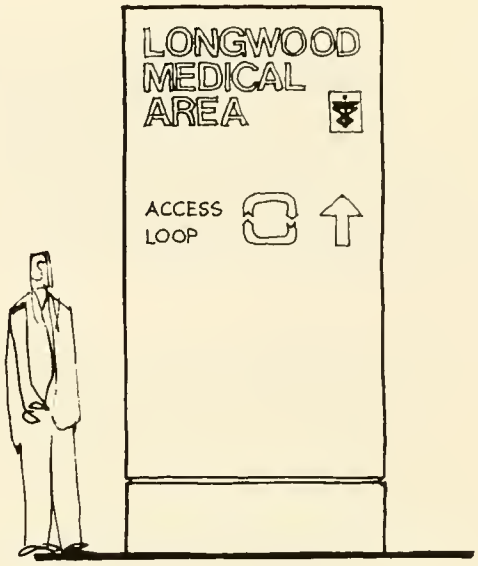


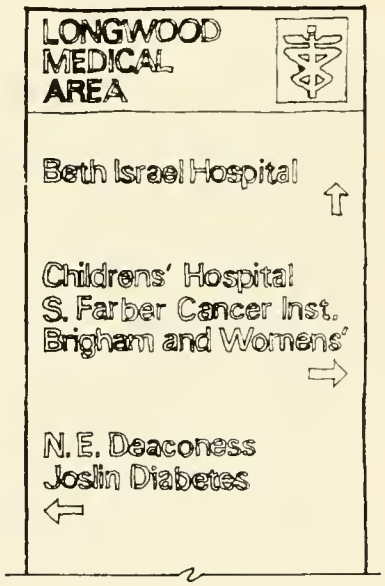


1-14

SIGN FORMAT STUDY:
PANEL AND POST







1-15

SIGN SYSTEM STUDY:
PYLON

3. The pedestrian system will present a hierarchy of information elements leading from (a) travel mode-change points (rapid transit stops, bus stops, and parking garages) to (b) the major pedestrian ways (e.g., Shattuck-Deaconess Mall) and then to (c) the various institutions. Signage at points of origin, (a) will give general orientation and the direction to the nearest pedestrian way, (b) information there will identify that pathway (for example, the Mall), and (c) will list and show the direction to the institutions' entrances.

   Special information elements at key central points along the pedestrian ways will provide additional directions to services and amenities. It is possible that one of these locations can appropriately be the site of a major Information Center. Located at an important intersection of pathways, such as the Town Square, and relating to the shuttle bus route around the Access Loop, this manned or unmanned Center could provide extensive information about the whole Longwood Area. Maps and directories, possibly utilizing automated audio-visual devices, could describe and locate institutions, specialized services, regular and special activities, retail facilities and other amenities, shuttle bus and public transit service, and general Area information.

4. The vehicular information system for the medical institutions will present a hierarchy of signage leading from (a) Gateway Signs at all five main entry points to the Longwood Area to (b) Directional Signs at Brookline Avenue and the Access Loop, and then to (c) Entrance Signs at each institution, and finally to (d) Parking Signs at each garage. In addition, (e) Emergency Entrance signs will be located at the appropriate entry points to guide ambulances and other emergency vehicles. (It is possible that these signs should be keyed to the identification of the Trauma Center.)

   The Gateway Signs, (a), will identify the "Longwood Medical Area", using this or other similar terminology, together with a graphic Logo. They should be designed to make the recognition of the Area as a cohesive entity clear to motorists as they pass or enter. The Directional Signs, (b), will be located at the six intersections on Brookline Avenue and along the Access Loop to identify the Loop itself and to provide key directions to institutional entrances at all turn decision points.

   The Entrance Signs, (c), will be located at the vehicular entry of each institution, displaying the particular institution's name or names. After the Conceptual Design is completed, mutually acceptable standards for Entrance Signs can be utilized as guides to the retention or replacement of existing institutional entrance signs. Parking Signs, (d), and Emergency Signs, (e), will simply identify each respective facility at the point of vehicular entry.

The information illustrated in the sign system examples reflects a simplified consolidated address pattern for the area hospitals, coordinated with the Access Loop routing concept. Beth Israel's address and access is directly on Brookline Avenue; Children's Hospital, Sidney Farber, Deaconess Hospital and Joslin are accessed from Longwood to either Binney or Pilgrim (Deaconess and Joslin would change to access from Francis under the long-term loop operation); and Brigham and Women's access is directly on Francis.

5. The vehicular directional information for the educational and cultural institutions takes as its organizing access path the Riverway - Fenway link--the "outer loop". Gateway Signs (a), coordinated or combined with the medical institution Gateways at the major entry points to the Area, will lead to (b) Directional Signs at key turn decision points, and then to (c) Entrance Signs at the various schools and colleges, etc. As appropriate, (d) Parking Signs will guide the motorists to nearby parking areas.

   These Gateway Signs, (a), will identify the "Fenway Institutions" (or other terminology) together with a graphic logo, giving these facilities recognition as a comprehensible entity. (In the future this sign system and the "Fenway" identity may be valuably extended to similar adjacent institutions outside of the Master Programming area, recognizing the physical continuity of the Fenway - Huntington institutional area.)

   Directional Signs, (b), will be located as needed at intersections on the Riverway and the Fenway which lead to entrances of educational institutions. However, most of these facilities presently have their entrances on the Riverway - Fenway Loop, and would require only Entrance Signs, (c), The Harvard Medical Schools and the Massachusetts College of Pharmacy and Allied Health Sciences would have a Directional Sign at Avenue Louis Pasteur on the Fenway, and in addition a sign on Huntington Avenue at Longwood.

6. Remote signs directing drivers to the Longwood Area should be installed at key exits from major area highways and arterials used for access to these institutions. These might include the MDC Parkways, Massachusetts Turnpike and major state DPW routes. Format and graphics should be coordinated with internal LMA signing, and with standards and regulations of responsible authorities.

Near-Term Project Scope. The near-term project is divided into two phases: 1. Conceptual Design of the overall area information sign system; and 2. Final Design of the medical institutions' sign system.

1. Concept Design involves development of an integrated overall design

concept for all the information elements described under "Design Concepts," above, including the pedestrian-related, Longwood medical institutions', and Fenway educational/cultural institutions' sign systems. The design concept should refine and develop the sets of elements and message location plan described above, providing each system with a unique identity and functional coherence, but respecting the relationships with the other area information systems. The sign systems design must coordinate with and clearly communicate the traffic pattern improvements included in the Riverway, Brookline Avenue and Access Loop Action Projects.

The concept design should explore physical form alternatives for the signs, the graphic design of their faces, message content organization, and the sign construction. These may include panel and post or pylon solutions (as illustrated in figures 1-14 and 1-15), overheads, building-mounts and other forms which the consultant may develop. Face design alternatives involving issues of shape, color-coding schemes, logo utilization, layout, lettering style, spacing and other graphic features are to be considered. Recommendations among the alternatives should be given for MASCO and institution review. The product of this phase will be schematic design of all the information elements for the area systems, including the medical institution signage, for the selected alternative.

Proposed maintenance plans for the sign system project will be developed - involving the institutions, MASCO, voluntary associations, and the City - setting and relating the responsibilities of the different elements. Design alternative projections will include maintenance implications and budgets. Design decisions must be based on prudent scopes of maintenance services. Maintenance plans for selected sign systems to be implemented will be further refined in final design.

2. Final Design of the Medical Institutions' Sign System will be based on the schematic designs developed in Concept Design. This involves detailed design development through construction documents preparation for fabrication and installation of all aspects of all the elements of the medical institutions' sign system, including sign format, message content, face design, mounting and installation. Although the exact scope of this work will be refined in the Concept Design phase it will include design of roughly the following numbers of signs: Gateway-5; Directional-6; Entrance-7 (depending on individual institution interest and decision); Parking-6; and Emergency Entrances-5.

Design Specifications.

1. Concept Design. For this phase, an information systems design consultant will be retained to perform the scope outlined above. The consultant should have experience in developing innovative and graphically effective

information systems, in complex and unusual urban situations. Experience in implementing sign systems from design through construction is essential.

The consultant will develop the Sign Systems Concept based on the Design Goals and Design Concepts discussed above, respecting the need for limited numbers of signage elements, differentiated systems for different purposes, hierarchies of elements and messages, and economy of means. The consultant must work interactively with representatives of MASCO and all the affected institutions, as well as consultants working on concurrent traffic projects, to responsively determine required message content and sign system design preferences. The consultant shall also interact with appropriate representatives of the City of Boston and the MDC to determine and coordinate with systems design constraints.

The consultant will identify applicable codes and approvals, and the implementation procedures required. Budget cost estimates for alternative proposed systems shall be developed, broken down by major component sign types. The final product will be a schematic design of all elements of the selected alternative, including detailed specifications for consultant efforts required for detailed design through implementation of the system.

2. Final Design and Construction Documents. It would be preferable for the same information system consultant who developed the Concept Design also to do Final Design, for most effective and efficient conceptual continuity. In any case, the same experience and capability requirements should apply.

   The work of Final Design is to be based on the approved Concept Design, as specified at the end of the previous phase. The consultant will provide detailed design development of all aspects of all sign elements of the system, including construction systems, and cost estimates for fabrication and installation, for MASCO approval prior to initiation of construction documents. MASCO will coordinate review and approvals by affected institutions.

   Upon direction to proceed, the consultant shall produce complete construction documents and specifications for fabrication and installation, including revised cost estimates, ready for final approval and construction bidding by MASCO. The consultant shall coordinate all necessary City and other approvals, and shall assist MASCO in the bidding process. Construction phase assistance should be negotiated after bidding.

Long-Term Improvements. The above scope develops schematic designs for the overall information system, but takes only the medical institutions' signage through detailed design and construction. Similar efforts should follow to complete the overall area system including: a. Fenway Educational/Cultural Institutions Sign System; b. Pedestrian Sign System and Information Center(s);

and c. Remote Vehicular Signs. The concepts and scopes of these systems, outlined above, will be defined and specified in the Concept Design phase.

Implementation Efforts Required. The MASCO administration must select and hire the information system design consultant indicated for the Concept Design work, based on the above scope. As Concept Design proceeds the MASCO administration must coordinate interactions with and approvals by affected area institutions, as noted, and by the MASCO Board. Implementation and funding responsibilities must be allocated between MASCO and the involved institutions, potential additional funding sources explored, and funds appropriated for construction of common and individual institution signage elements.

Action Project: LONGWOOD AVENUE FLOW IMPROVEMENTS

Project Number: 1981-5

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

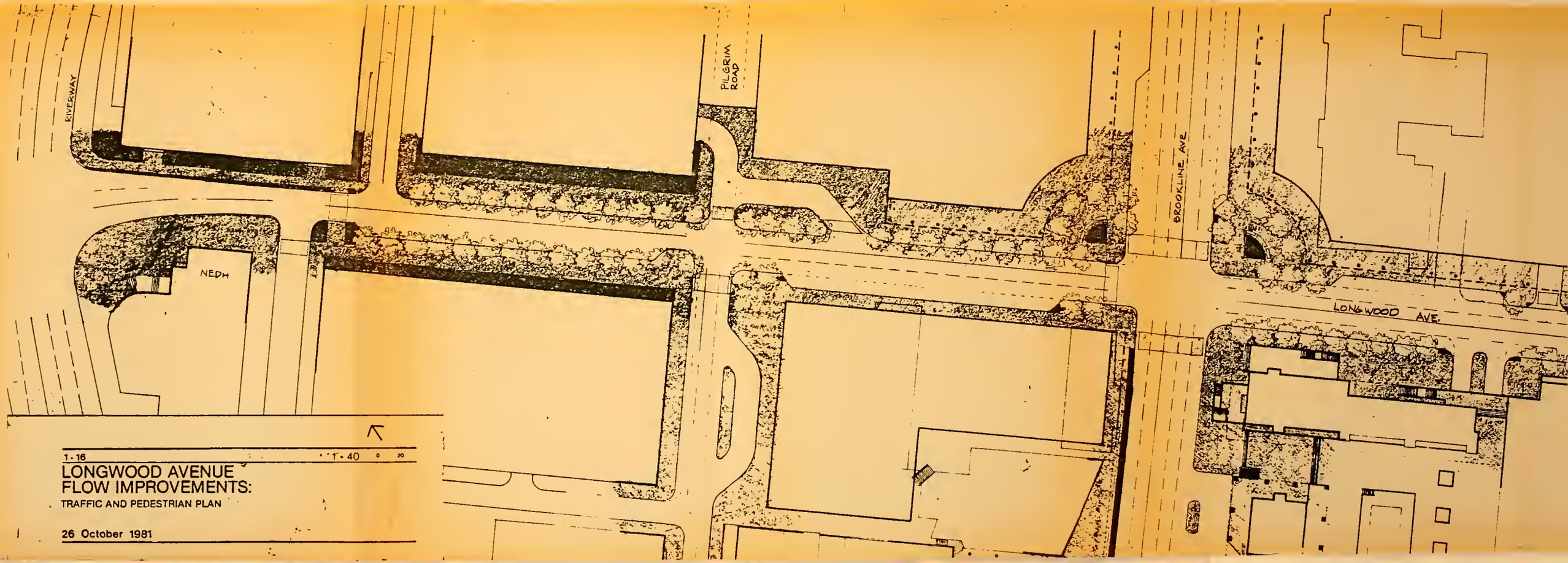
Action Project design work to begin in late 1982. Implementation to be coordinated with abutting parcel developments.

Project Description:

Design Concept. Longwood Avenue in the LMA is primarily a local access street, with many destinations and turn movements along its length. Because it extends westward into Brookline and connects eastward beyond Huntington Avenue it also carries some through traffic, enough to add to the congestion but not so much as to make it a major element in the city's basic network. Accordingly, primary improvements are aimed at clarification of parking and drop-off locations along the street, and the smoothest possible flow of one lane in each direction at all times. Eventual consideration may be given to one way coupling with Francis Street or partial reversals in alternative peak travel periods, but these are not included in the basic Action Project.

Project Scope. The proposed improvements to be designed are illustrated in figure 1-16. The plan is to provide a travelway of varying width within the existing right-of-way such that there will be 40' of pavement wherever parking is permitted on one side and stopping on the other, 34' of pavement where parking or stopping is permitted on one side only, and 26' of pavement where stopping and parking are prohibited on both sides.

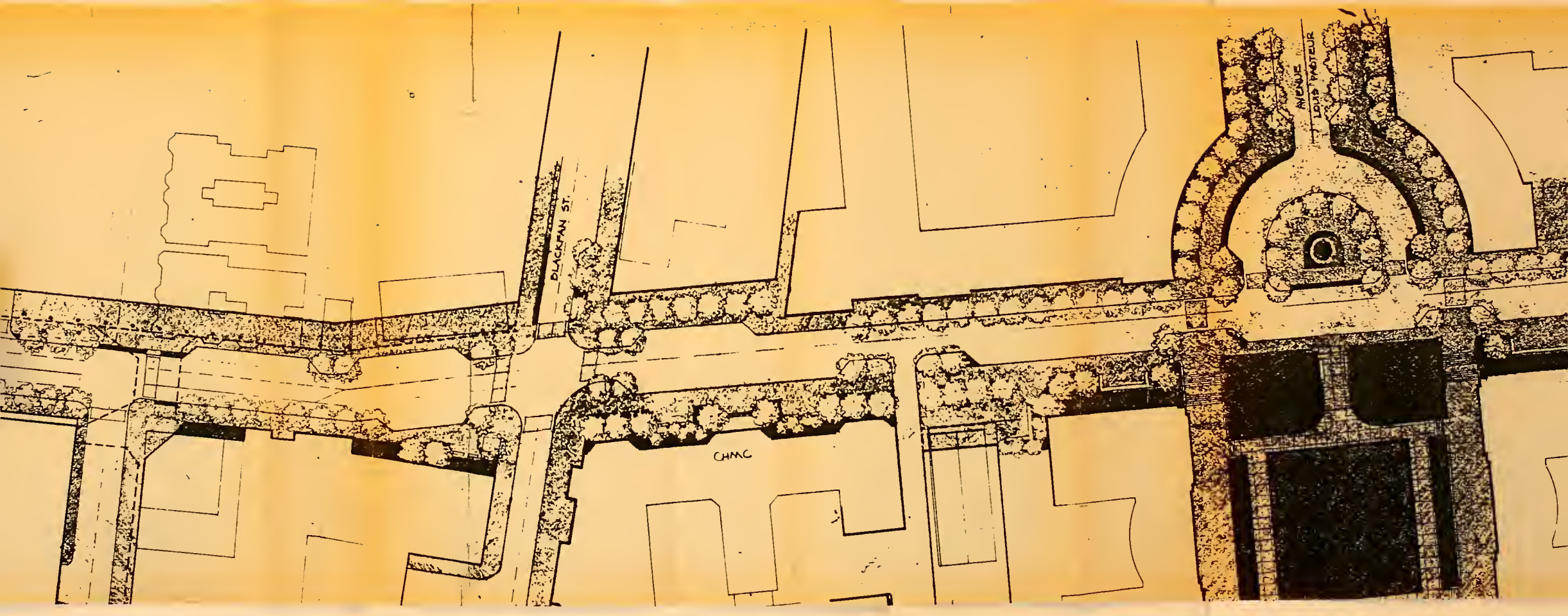
Parking is limited to short-term (15-minute) use only. It is generally permitted on the south side of the street, except in the area of the Access Loop and at the approach to Huntington Avenue. Parking and stopping are not allowed in the congested blocks between Pilgrim Road and Binney Street to provide two moving lanes in the direction of the Access Loop, and for traffic approaching Brookline westbound where heavy turn movements need to be accommodated. Park-

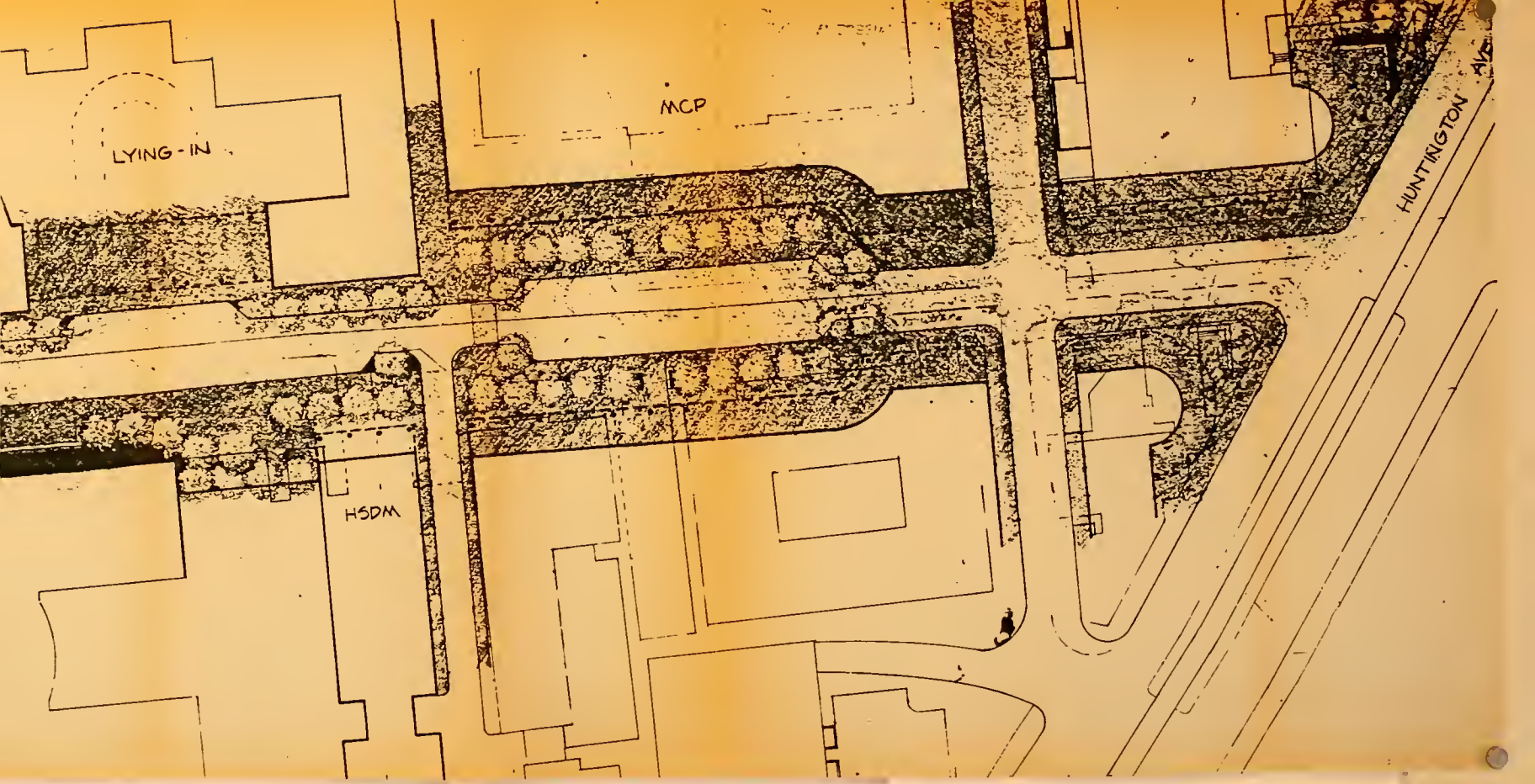


LONGWOOD AVENUE
FLOW IMPROVEMENTS:

TRAFFIC AND PEDESTRIAN PLAN

26 October 1981


BLACKFAN ST.
AVENUE
LOUIS PASTEUR
CHMC


LYING-IN
MCP
HSDM
HUNTINGTON AVE.

ing is also not allowed from Palace Road to Huntington, to provide two eastbound lanes to sort out traffic turning at Huntington. Neckdowns at all corners and key crossing points define the permitted parking and drop-off areas, and direct and facilitate pedestrian crossing of Longwood.

To accomplish the desired street widenings and narrowings will probably require drainage and contour changes so extensive that complete replacement of the pavement and curbings will be necessary. All manholes and catch basins will require relocation or leveling. No changes in underground networks are anticipated. All fire hydrants, light poles, signal poles, traffic and parking signs, parking meters and other sidewalk equipment will be subject to relocation or revision as a consequence of the street width changes. Standard equipment is to be used.

The street modifications described should be designed in coordination with sidewalk improvements along the length of Longwood Avenue. These are not included in this project scope, however. The pedestrian space improvements are discussed in Framework Element 4. Open Space. They are assumed to be constructed at their own schedule, in coordination with adjacent parcel development. The street modifications, if done in advance of the sidewalk improvements, will require some temporary sidewalk work - new curbs, neckdowns and partial repaving - to accommodate the interim period.

Design Specifications. A traffic, utility and roadway engineering firm should be retained to:

1. Conduct parking, loading and stopping study and analysis of the entire length of roadway to pinpoint curb activity and needs. These studies must involve and be reviewed with abutting institutions for appropriate use determination and coordination.

2. Provide geometric design plans and curb usage control plans for proposed curb line configuration.

3. Design and specify all necessary sign and parking controls and lane markings (No complete traffic signal replacement or relocation is to be included).

4. Study necessary changes in pavement configuration and identify areas of repair, resurfacing and complete reconstruction.

5. Coordinate any need for repair or revision of underground utilities by others. (No utility changes are to be included in this assignment except those essential to the changes in surface configuration).

6. Design and produce contract documents and specifications for installation

for all essential pavement, utility, and curb work to be undertaken.

7. Design and specify any street lighting and fire hydrant relocations and any other minimal sidewalk changes that may be required to accommodate the changed curb line configuration during the interim period.

The consultant firm shall coordinate all design engineering with prior and concurrent work on intersecting area streets, including the Riverway, Brookline Avenue and Access Loop Action Projects. All Longwood Avenue improvements are predicated on consultation with and concurrence of the Commissioner of Traffic and Parking of the City of Boston.

One-Way Options. Consideration should be given to the eventual one-way operation of Longwood. This would be done as a one-way pair with Francis Street, and should be coordinated with the direction of flow and access patterns of the Access Loop. Two moving lanes plus defined parking cut-outs could be retained, as in the design concept above. Several critical issues must be investigated about the operation of this one-way system: 1. the adequacy of accommodation of the significant traffic flows currently on Longwood in both directions, both in the morning and afternoon; 2. the problematical connection of Francis to the Riverway and routes west, which may be soluble by directing traffic along the loop on Pilgrim and operating Longwood two-ways west of Pilgrim; and 3. the access and egress implications for each LMA institution of such one-way operation, the improvement of which remains the primary purpose of traffic modifications to Longwood.

An alternative one-way pattern to be considered is a reversible morning/afternoon peak system. However, the significant flows in both directions at all times, and the opposing egress patterns to Brookline and Huntington Avenues, argue against the viability of this option. In any case, consideration of either of these one-way operating patterns or other long-term alternatives for Longwood Avenue does not conflict with and need not delay implementation of the design concept discussed above.

Implementation Efforts Required. MASCO must determine the priority to be given to the Longwood Avenue improvements, both the basic design scope described and any alternative operating patterns. The improvements are not as critical to area traffic problems as those addressed by the Riverway, Brookline Avenue, Access Loop and Sign System projects. The Access Loop already alleviates the most congested section of Longwood Avenue. However, the significant benefits and integral nature of this project to overall area improvements and development justify near-term consideration of its implementation.

When authorized, the MASCO administration must select and hire the engineering design consultant indicated, based on the above scope. Meetings with representatives of the City of Boston Traffic and Parking Commission, BRA, Public Works

Department and other agencies should be held to gain support for the project and work out implementation relationships. The design engineer should coordinate with Boston Traffic and Parking engineering personnel and other city agency representatives throughout design. MASCO should coordinate effectuation of appropriate traffic and parking regulations and their enforcement with police and other city agencies.

Action Project: OTHER PROJECTS FOR FURTHER INVESTIGATION

Project Number:

Framework Element: Traffic and Access

Current Schedule (as of October 1981):

Conceptual alternatives investigations and Agreements for Huntington Avenue Improvements to be pursued beginning mid-1982. Other projects indefinite.

Project Description:

The following topics have not been studied to the level of the preceding projects, but should be considered for further background investigation and potential development as Action Projects.

Huntington Avenue Through Traffic Improvements. Huntington Avenue represents the second major opportunity to divert through traffic from the center of the LMA on Brookline Avenue to the edge of the area. The problems with Huntington serving as a through arterial include: its poor connection to downtown distribution routes; the many intersections and destinations along its length, which cause stopping, drop-offs and traffic movement friction; and conflicts with the MBTA trolleys. Any incremental improvements in the Huntington flow should help relieve Brookline Avenue. Some improvements in transit and vehicle rights-of-way have already been completed north of Brigham Circle. The following additional improvements are key to developing effective through traffic movement:

- Widening Huntington South of Brigham Circle. This area presents the critical capacity constraint. Widening the roadway is required to provide a separate transit right-of-way, or at least wider vehicular lanes. Joint MBTA and City of Boston efforts are necessary to improve this area. There is a clear potential for efforts by MASCO, its member institutions and the community to influence official action on this problem to revive solution proposals.

- Huntington/Fenway Connection Improvements. Good access from Huntington to the Fenway would provide connection of this route to better downtown and northeastward distribution, and avoid much of the congested length of Huntington. The best connecting streets should be investigated: Evans Way and Forsyth Street provide good possibilities. Issues of concern are the required crossing of the tracks for northbound movement, the lack of space for left turn lanes and potential traffic back-up problems on Huntington, and angles of turn required onto the connecting streets. Means to resolve or ameliorate these problems should be developed. Even in the absence of resolution of the capacity problem south of Brigham Circle, this connection would benefit LMA access and egress routes to the north and northeast.

One-Way Operating Patterns. More extensive one-way operating patterns for area streets should be examined. This could extend the simplification and operational benefits of the Access Loop. Developing a one-way pair of Longwood and Francis is discussed in the section on Longwood Avenue Flow Improvements. One-way operation of Huntington Avenue and the Riverway for through traffic might be considered, although these arterials are so far apart that they are not likely to work effectively as a one-way pair. In addition, the LMA between them is such a major activity center that its internal traffic operations require two-way streets at its edges to avoid inefficient circulation patterns. The concept of one-way operation should be considered comprehensively for the traffic operation of the entire Longwood Medical Area.

Blackfan Street Extension. Extension of Blackfan Street to Avenue Louis Pasteur, on a right-of-way between Boston English High School and Emmanuel College, as recommended in the Hilgenhurst/Wilbur Smith report, "Transportation Planning for the Longwood Medical Area" (1975), should remain a possibility for further consideration. It would provide alternative access and egress for the significant numbers of existing and potential parking spaces on Blackfan and at the back of the Beth Israel Hospital. Operation and implications of this proposed connection should be considered in relationship to Access Loop patterns.

Shuttle-Bus and Transit Improvements. A broad array of problems and potential improvements in this area need to be addressed: additional shuttle routes; coordination of operation with the Access Loop; location and provision of bus stops and cut-outs; coordination of MBTA and private transit operations which serve the area, in terms of routing, schedules, and stop locations; routing of school buses to the area high schools to minimize traffic congestion; coordination of all the above with traffic, signing, pedestrian space, security and development plans for the LMA. Many of these issues can be handled by MASCO staff; some may need to be defined as Action Projects for outside consultant efforts.

Jamaicaway/Huntington/South Huntington Intersection. This intersection just south of the LMA has long been a major congestion problem, limiting the capacity and viability of Huntington Avenue for through traffic and as an access route to LMA institutions. Trolley tracks making a tight turn in the center of the street conflict with vehicular traffic, which is already involved in a constrained three-way intersection. The ramps for interchange from the Jamaicaway to Huntington Avenue/Route 9 are of substandard configuration, presenting movement, visibility and capacity problems. Resolution of this complex of problems should combine modifications to the track alignment, preferably to provide a separated right-of-way, with improvements to the ramp system and three-way interchange.

Brookline Village Traffic. This major traffic intersection, immediately beyond the Jamaicaway/Huntington interchange on Route 9, is a typical "double-throated" intersection. Two major roads join at each end - Brookline and Huntington Avenues at one end, Washington and Boylston Streets at the other - causing left-turn crossings, weaving and back-up problems in between. Some traffic backs up onto Brookline Avenue toward the LMA. Short of grade separating the intersection, which is highly unlikely, amelioration of this problem is limited to signal timing modifications to better accommodate the dominant flows. The right turn slot from Brookline Avenue onto Boylston Street might also be widened to accommodate two full lanes.

Framework Element 2: Parking

Framework: 2. PARKING

Definition of the Problem. Throughout the interview and briefing process with all of the MASCO institutions, the main thrust in the parking area was to define what each institution perceives as the major problem areas in the issue of parking. One statement was made unanimously, and that is that the major problem is not one of the number of parking spaces, but of how those spaces are utilized by all the people that have a need to use them. The parking problem, then, is really one of management policies, and how they are coordinated among and implemented by the area institutions.

Proposed efforts and recommendations will therefore deal with the issues of how to bring about change and improvement in parking systems and management by examining policy and how it is treated. The need for additional space, immediate or future, is not evaluated, and cannot be until clearer management policies are defined and implemented, and their results analyzed.

The issues that affect development of an areawide parking strategy are many, but the major issues involve: definition of the categories of users; and clarification of the critical policy realms for each user category, including cost, location and availability.

Current MASCO Role. MASCO currently provides a variety of parking services that include the following:

- Leasing and operating three parking locations serving five of its members and providing 975 spaces for employee parking.
- Managing and operating a 200-space facility for the Sidney Farber Cancer Institute.
- Leasing and managing the 630-space Servicenter Garage for employee and visitor parking.

Congruent with these services are other services that directly affect the parking impact for each institution. These are:

- A parking shuttle that carries 1800 employees daily.
- A shuttle service from Harvard Medical School to Cambridge that carries 2400 people daily.
- A shuttle service to North Station from the LMA, recently instituted

to provide additional viable commuting options for area employees.

- An areawide Rideshare program to promote car-pooling for area employees and alleviate the volume of employee vehicles in the LMA.

- A parking enforcement program with the Boston Police Department to improve access in critical areas in the LMA.

All the above services have an impact on the volume of employee parkers in the area or impact on the ability of patients and visitors to use the institutions as a source of health care. These will not be examined further here as they do not directly involve parking policy management but are mentioned only to illustrate the other services available to the area's population.

Policy Issues. For development of parking policies, user categories can be defined as:

- Visitors (patients, guests)
- Upper Level Staff (staff doctors, faculty, upper level administrators)
- Visiting/Associate Staff
- Nurses, Residents, Interns
- Lower Level Staff
- Students.

Critical realms where policies need to be understood and set for each user category are:

- Cost - rates for turnover parkers; and how employee parking rates are set, subsidized and managed.

- Location - how the portions of any parking facility are managed for the user categories; which users are being provided reserved spaces, closest to the entrance, on-site, off-site, etc.

- Availability - priorities for each user category to be assigned spaces or permits; and if and how waiting lists are used and managed for employee parkers.

These issues are not independent. The interaction of where people park, at what cost, and whether that cost is a function of availability, all create the problems at hand. These parking policy issues also interact with the availability, promotion and subsidy policies of transit and alternative transportation services. The issue of the degree of coordination or uniformity in policies required among the member institutions must also be addressed.

Area parking strategy must also reflect policies relative to area growth

projections and development options. Both institutional futures and commercial and other support activities development will impact the need for and management of parking facilities. These considerations must also relate to the traffic capacity limitations of area streets. Assuming current levels of development and activity are adequately served by existing spaces available, either policies must be developed to provide additional capacity to serve only immediate needs of new development, or measures designed to serve the additional access demand through alternatives other than increased private vehicle travel and parking.

Near-Term Action Projects. The following action projects are proposed to proceed with the development of parking policies and strategy implementation:

- Inventory of Institutional Parking Policies
- Costs/Revenues/Subsidies Clarification
- Area-wide Rate System
- Shared Maintenance Functions
- Parking Management Proposal
- Strategies to Meet Parking Demands

Action Project: INVENTORY OF INSTITUTIONAL PARKING POLICIES

Project Number: 1981-6

Framework Element: Parking

Current Schedule (as of October 1981):

Initiated by MASCO staff, for completion by December 1981.

Project Description:

Develop a comprehensive inventory of current institutional policies relating to available space, cost of space, and allocation procedures. Develop, implement and analyze a questionnaire to all member institutions, and establish a data base for future policy development.

Action Project: COSTS/REVENUES/SUBSIDIES CLARIFICATION

Project Number: 1981-7

Framework Element: Parking

Current Schedule (as of October 1981):

Initiated by MASCO staff, for completion by December 1981.

Project Description:

Clarify the operating costs and revenues, and the volume of parking subsidies currently being provided to employees at member institutions. Defined as the difference between the costs to the institutions and price paid by employees, total subsidies run between .5 and 1 million dollars per year. Currently only 26% of parking space is used for turnover parking and 74% for monthly parking. This has the effect of encouraging single-occupant monthly parkers to continue to drive; provides no incentive to ride-sharing either with preferential space or reduced costs; and eliminates institutional financial support to the transit dependent segment of the institutional population. The cost of these subsidies could be reduced, while simultaneously expanding available turnover parking and resultant revenues.

The MASCO Parking Study Group has begun an analysis to understand the current situation, as a basis for future strategy development. This includes a financial inventory covering operating and fixed costs, subsidy procedures, and revenue experience and projections for all member parking facilities.

Action Project: AREA-WIDE RATE SYSTEM

Project Number: 1981-8

Framework Element: Parking

Current Schedule (as of October 1981):

Completed and implemented, July 1981.

Project Description:

Develop an areawide rate system for employee and turnover parkers in order to provide a beneficial mix of space based upon the demand of each user category. Propose to member institutions.

Action Project: SHARED MAINTENANCE FUNCTIONS

Project Number: 1981-9

Framework Element: Parking

Current Schedule (as of October 1981):

Action Project development projected for winter of 1982.

Project Description:

Define and evaluate common areas of operating expense that benefit from shared costs, such as garage sweeping, maintenance, purchase of tickets and stickers, and security. Develop a proposal for MASCO operation of such shared services to improve efficiency and reduce costs, for submission to member institutions.

Action Project: PARKING MANAGEMENT PROPOSAL

Project Number: 1981-10

Framework Element: Parking

Current Schedule (as of October 1981):

Action Project development projected for winter and spring of 1982.

Project Description:

Explore strategies whereby MASCO can provide a recommended policy package to be used as desired by each institution, with the option to have MASCO manage its facility. Submit to selected institutions, as appropriate.

Action Project: STRATEGIES TO MEET PARKING DEMAND

Project Number: 1981-11

Framework Element: Parking

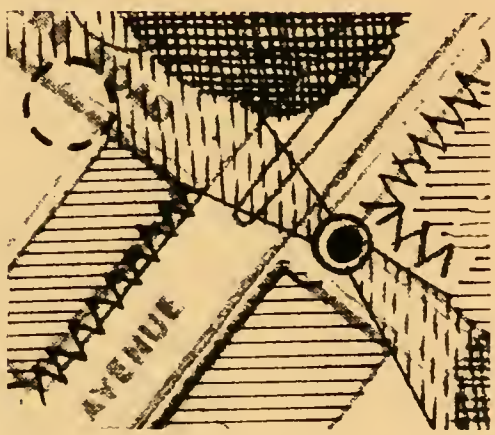
Current Schedule (as of October 1981):

Continuously on-going.

Project Description:

Continue to identify and explore methods to alter behavior patterns of the commuting public in order to reduce employee parking. Explore the potentials for more transit and shuttle services for the transit dependent population, and for more commuter utilization of ride-sharing, van-pooling and remote parking. As part of this on-going exploration and strategy development, update and maintain an area parking use and demand data base for all institutions.

Framework Element 3: Security



Framework: 3. SECURITY

Concept. The interviews with representatives of the various institutions, conducted as the first step in the Master Programming process, identified security as one of the two most important problems to be addressed. The view is generally held that the Longwood Area is the target of a disproportionately large number of security incidents, and that the risk to individuals is higher here than elsewhere. Whether this is statistically true is separate from the fact that the perception exists. Therefore, the overall goal of the security efforts in the Longwood Area must be summarized in two points:

a) improved public perception: increase peoples' sense of the area being a safe place to work and visit.

b) increased safety: reduce the number and severity of incidents.

The security problem can be described in four categories of incidents, in order of increasing severity:

a) intrusion - unwanted persons on institutions property.

b) disruptive behavior - partying groups, miscellaneous vandalism, etc.

c) crimes involving property - theft without violence against persons.

d) violent crimes against persons - armed robbery, rape, etc.

Security incidents are internal to an individual institution's private property, or external, i.e., occuring in areas generally considered public. The focus of the Master Programming efforts will be on external security throughout the Longwood Area. These efforts must consider the division of responsibility between the several institutions, the integration of institution-based efforts with area-wide programs, the statutory responsibilities of the City of Boston, MDC and MBTA police, and the relationship to the broader neighboring community.

Action Projects. Initial improvements in the area security efforts include the following:

- Public Awareness and Community Interaction
- Comprehensive Data Base Development
- Coordination of Inter-Institutional Security Programs

- Evaluation of Enlargement of the External Patrol

- Security-Reenforcing Environmental Modifications.

While the initial actions suggested are primarily to begin the coordination and improvements of security within the LMA, it is hoped that over the long term, security will decrease as a critical problem if the larger neighborhood is able to improve. For this reason, in the Long Term Process proposed in this report, strategies are suggested for having MASCO, working with neighborhood leadership, help catalyze a process of change for the whole area.

Implementation Efforts Required. The MASCO administration must be authorized to take on the central coordination and record-keeping responsibility, to develop plans for environmental modification, and to augment present staff and/or retain outside consultants as they judge necessary to achieve the near-term scope defined in the Action Project descriptions. At the time of this report, the Master Programming effort has identified the areas for the initial security improvements; however, it should be understood that the specific designs and policies that will make up these improvements must come from the continuing planning efforts which are an integral part of these initial steps. An analysis of results of these steps and proposals for long-term steps must be brought to the MASCO Board for further action.

Action Project: PUBLIC AWARENESS AND COMMUNITY INTERACTION

Project Number: 1981-12

Framework Element: Security

Current Schedule (as of October 1981):

Initiation in the fall of 1981 as an on-going process.

Project Description:

MASCO, possibly with a supporting consultant, should develop the essential strategies to ensure that improved security enforcement efforts also lead to an improved public perception of the safety of the Longwood Area. Employee programs within the institutions, newsletter information items and other communication measures may be among the techniques utilized.

MASCO should foster a broad set of efforts relating to the community and impacting the area's security. A centralized effort here could provide a unified focus and make a more effective impact with the support already being provided for institutional/community programs. MASCO could take the responsibility to establish and expand social support programs in the neighboring community, such as medical services and employment programs; develop channels for frank and open communication; support community initiatives for physical improvements, such as improvements to the present housing stock, programs to relieve the pressures of gentrification, up-grading of commercial services. These improvements in the quality of the larger area are essential to the long-term improvement of the quality and security of the LMA.

These measures of public awareness and participation and community interaction affecting security should be an integral part of the community process described in Framework Element 6. Long Term Process.

Action Project: COMPREHENSIVE DATA BASE DEVELOPMENT

Project Number: 1981-13

Framework Element: Security

Current Schedule (as of October 1981):

Development projected for the fall of 1981, with data base maintenance continuing as an on-going function.

Project Description:

Two groups of data are necessary to the development of an effective security program: (a) an identification of primary pedestrian movements to and from institutions, including numbers of persons, time of day, and origin and destination; and (b) a history and continuing current record of security incidents, including type, location and time of occurance, with data about the offender if possible.

MASCO has begun to and should continue to coordinate the collection of pedestrian circulation information from each of the Area institutions, and should up-date it periodically, in order to efficiently distribute security efforts and to plan in detail the new pedestrian open space network. Similarly MASCO should continue and expand the collection of historical data on criminal incidents in the Longwood Area and the surrounding neighborhoods. This will provide a further planning base for new security efforts. Importantly, MASCO should establish reporting processes for use by all institutional security staffs and maintain a central record of on-going current incident data. This data, combining institutional and public agency reports, will make immediately available key information, necessary for effective management of security efforts, but now virtually unobtainable.

Action Project: COORDINATION OF INTER-INSTITUTIONAL SECURITY PROGRAMS

Project Number: 1981-14

Framework Element: Security

Current Schedule (as of October 1981):

Action Project development projected for fall 1981-winter 1982, and on-going thereafter.

Project Description:

MASCO should facilitate the linking of the individual institutions' security programs in order to increase the efficiency of the overall effort. This should include such measures as: the coordination of exterior patrol policies between adjacent institutions; the improvement of communication systems connecting all security operations (e.g., replace the "F.A.S.T." system with Centrex phone links, introduce a common radio frequency); the adoption of a common response policy; and the training of security personnel on an Area-wide basis.

This could lead to future evaluation of the potential for central management of coordinated security operations. MASCO, with in-house staff or supported by a security planning consultant, could provide the central management responsibility for monitoring coordinated operations and overall security performance, and for creating the policies that ensure that the separate efforts add up to a coherent and effective program.

Action Project: EVALUATION OF ENLARGEMENT OF THE EXTERNAL PATROL

Project Number: 1981-15

Framework Element: Security

Current Schedule (as of October 1981):

Initial investigations already begun. Evaluation efforts to be further pursued through the winter of 1982.

Project Description:

Evaluation will be made of the expansion of the MASCO-contracted External Patrol, in order to better cover areas not under the surveillance of institutional patrols, including coverage during the day shift. Considerations of present needs suggest that addition of a third vehicle and attendant personnel, together with the extension of the time of operation, might consititute a valuable initial step.

A longer-term potential for evaluation would be the development of a Longwood Area Police Force. Economy of operation as well as efficiency of coverage and response may make it advisable for MASCO to assume direct operating responsibility for the External Patrol, including the hiring/training and direction of these personnel. The scope of this force's responsibility would be designed for the most effective interface with insitituional security operations. Advantages and disadvantages of future implementation of this step should be discussed in the near term by the Area institutions; it is possible that support from a security planning consultant would be valuable in evaluating this direction.

Action Project: SECURITY-REENFORCING ENVIRONMENTAL MODIFICATIONS

Project Number: 1981-16

Framework Element: Security

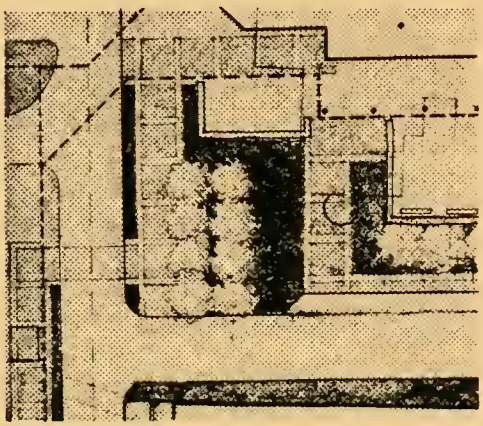
Current Schedule (as of October 1981):

Initial efforts have been completed as of the summer of 1981 (lighting level and pedestrian traffic path studies), with certain aspects being implemented as of this fall and winter. Further specific studies and environmental modification implementations will be a continuing process.

Project Description:

MASCO should sponsor the planning and design of appropriate physical elements and modifications which will reduce the opportunity for attacks on pedestrians, and execute the implementation when action other than by individual institutions is judged mutually valuable. This planning should include efforts such as: the definition of major pedestrian circulation paths and of redundant routes to be closed; the suggested use of walls and gates to secure specific territories and to provide limits to circulation ways; and the investigation and design of suitable supporting hardware such as lighting, surveillance and alarm/phone systems.

Framework Element 4: Open Space



Framework: 4. OPEN SPACE

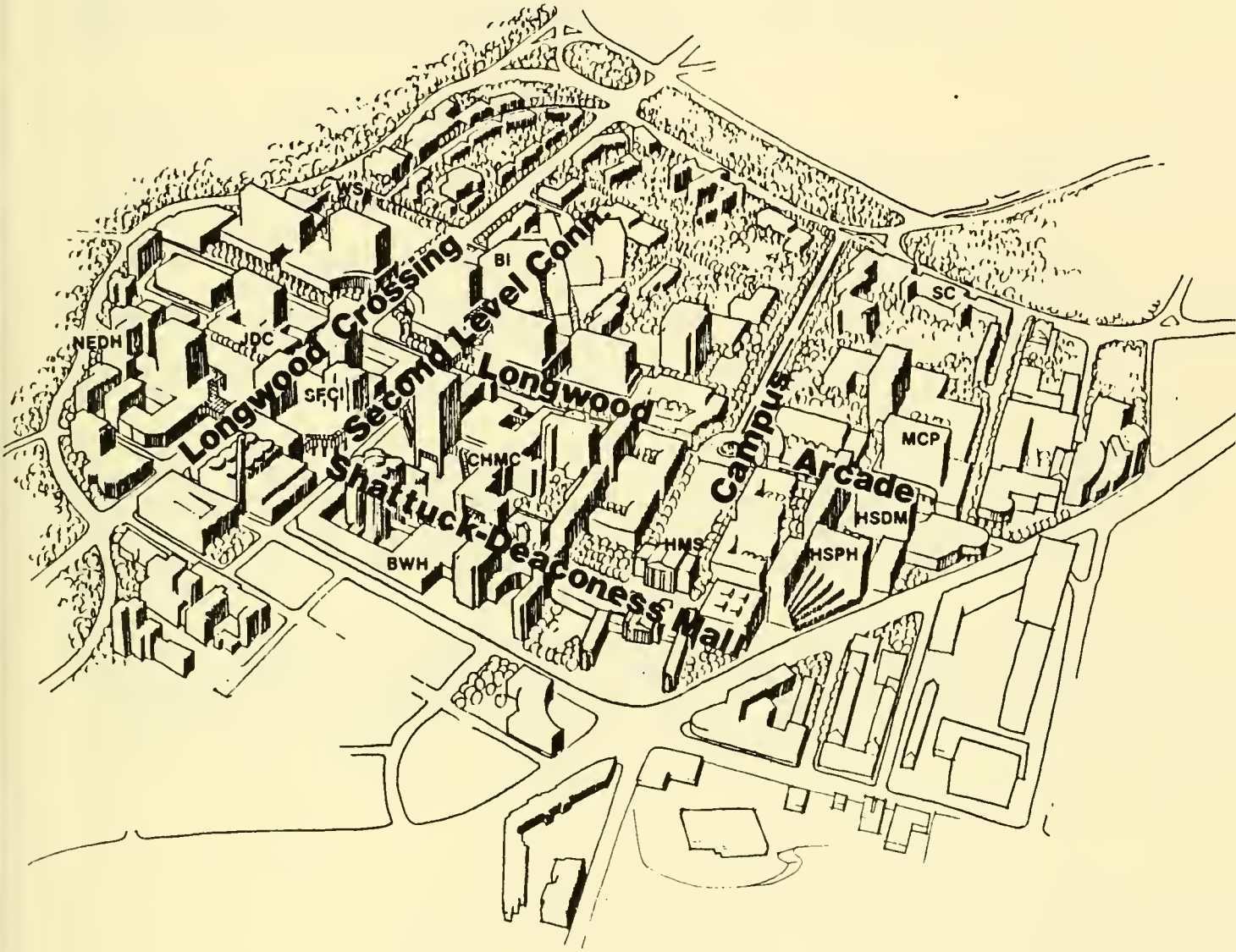
A key concern has been the general attractiveness of the LMA - an issue which affects the willingness of patients, students and practitioners to come to the area and the quality of life in it. Hence, a key Element of the proposed Framework is to add outdoor space amenities in a pattern that eliminates to a large degree the chaos and leftover quality of spaces between the separate institutions. In an area where staff and served population often work in conditions of constant stress, having such places to relax, to escape to, or simply to meet friends or be outdoors has been cited as a critical need. Therefore this Framework for future organization of the area is based on clarifying the spatial systems of the LMA campus and ladder and enhancing their qualities.

A key assumption is that the Framework will continuously evolve and that further design work should take place to enlarge upon and expand the scope of visions, herein outlined only in initial form. The Framework should include the following development: first, that two major corridors of pedestrian movement be developed as the Longwood Arcade and Shattuck-Deaconess Mall; second, that north-south pedestrian connections be improved (e.g., by exploring the possibility of a second level connector, and by improving the commercial activity along Brookline Avenue to create a center called Longwood Crossing); and third, that the Campus environment begin to be developed as a whole.

These elements are represented in the perspective sketch of the area (figure 4-1). They should largely be achieved through development by the various LMA institutions, coordinated in a way that reenforces the overall patterns. Hence, these common features should be developed as a series of separate projects, accomplished as abutting projects proceed.

The design of each of the features can proceed separately, using the Framework for coordinating guidance; the design work is proposed and budgeted separately as the following Action Projects:

- Shattuck-Deaconess Mall
- Longwood Arcade
- Longwood Crossing
- Second Level Connector
- The Campus (including further overall Framework design).



4-1

OPEN SPACE

FRAMEWORK

The procedure for each of these Action Projects will take roughly the same steps. They will begin with interviews with the staff of each of the institutions to determine as much as possible:

a) future development plans and schedules;
b) present and future service problems;
c) security issues;
d) relationship of the proposed designs to the internal workings of the abutting buildings.

Based on these interviews, designs will be prepared and economic consequences analyzed. Following reviews with MASCO representatives, an overall design, schedule, and procedure for realization of each project will be developed. The designs will contain further specific guidelines concerning access needs, key dimensions, unifying design concepts, specific materials and design features, security measures.

For each project a maintenance plan will be developed - involving the institutions, MASCO, voluntary associations, and the City. This will set the related responsibilities of these different actors for open space operation and maintenance. Design alternative projections will include maintenance implications and budgets, and design decisions will be based on prudent scopes of maintenance services.

The actual realization of these Action Projects is to be achieved mostly through Agreements between the affected institutions, which MASCO should help to coordinate. Some aspects of area-wide interest may be implemented directly by MASCO, through apportioned institutional contributions.

Action Project: SHATTUCK-DEACONESS MALL

Project Number: 1981-17

Framework Element: Open Space

Current Schedule (as of October 1981):

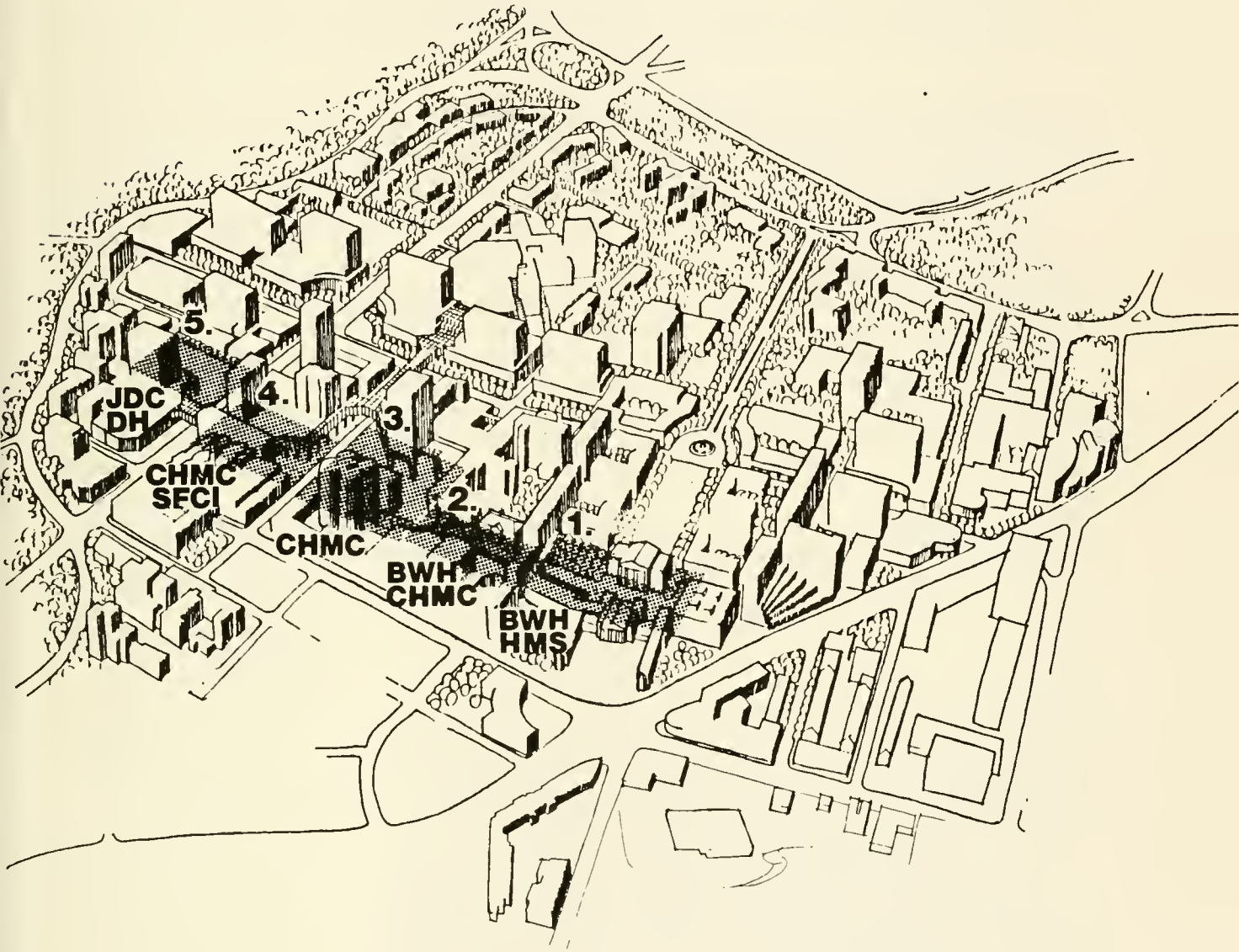
Action Project design and work on inter-institutional Agreements are scheduled to proceed from fall 1981 through spring 1982. Near-term improvements to realize an initial pedestrian mall are projected for the summer and fall of 1982. Future permanent improvements will be coordinated with abutting site development projects.

Project Description:

Design Concept. Most of the medical institutions abut Shattuck and Deaconess Roads, which at present are primarily access, service and parking areas. These alignments are to become a pedestrian mall, which will contain or be close to the major entrances of the Harvard School of Public Health, Countway Library, the administrative offices of the Harvard Medical School, the Children's Hospital, Brigham and Women's Hospital, the Sidney Farber Cancer Institute, the Joslin Diabetes Center, and Deaconess Hospital (see figure 4-2). It is possible to realize the mall in a short period of time because there is circulation there now: pedestrianization, at the start, can largely be accomplished through controlling the present traffic and parking.

In realizing the mall initially, appropriate but inexpensive landscaping and pedestrian improvements should be made. Such initial features should include sizable trees (in boxed planters), benches, bollards and signage to control traffic, and limited pavement improvements (e.g., repair of surfaces, applied surface decoration). Service requirements will occasion the need for service vehicles on the mall, and the space development will be designed to accommodate this, both in the near-and long-term.

The future improvements can be made over a longer period of time, scheduled to be realized either as separate benefactions (such as through memorial contributions for special features) or as part of the normal work on projects for developing the adjacent parcels. (All institution staffs and directors so far interviewed indicate that the mall is desirable and realizable.) Hence,



4-2

OPEN SPACE

SHATTUCK-DEACONESS MALL

the Action Project proposes the simultaneous undertaking of design and installation of a functioning mall, and setting up a schedule to achieve the more permanent features.

Because the Mall is on property separately owned by the various institutions or the City of Boston, it is likely that the final features of the design will be realized as each owner has need for doing development for the portion controlled. It should be the responsibility of MASCO, when coordinating the execution of the initial functioning mall, to establish design guidelines assuring a continuous and coordinated result. An initial drawing of such features is shown in figure 4-3, which illustrates the substantially improved quality of the pedestrian environment that can be achieved while accommodating service and car access. (Note: an alternative option for the connection between Blackfan Street and Brookline Avenue is shown as figure 4-4.) Other elements such as gating, lighting, and memorial features such as gardens, fountains, statuary should also be included. The guidelines developed should contain the elements needed to articulate separate Action Projects as mentioned above.

Segments. Because of the separate ownership of the separate segments, design investigation must account to the needs of the most affected institutions. A preliminary review of their planning issues and status is as follows:

Segment 1: (Segment numbers refer to those on figure 4-2.)

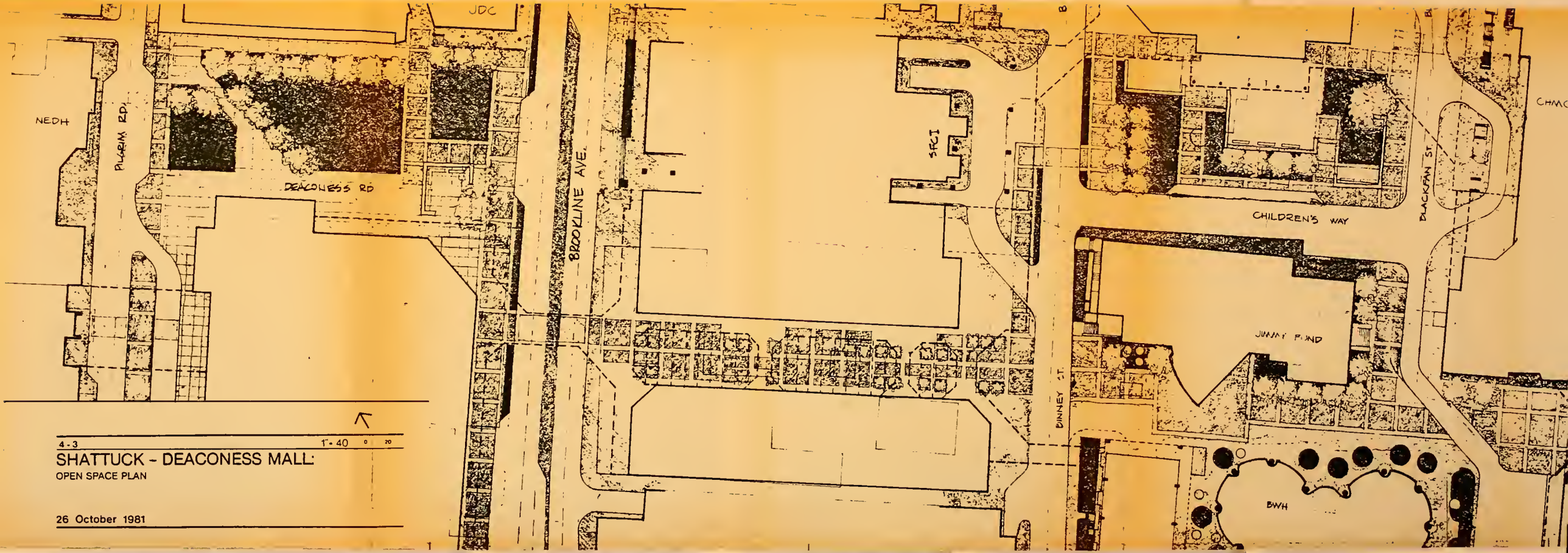
Affected Institutions: Harvard Medical School, Brigham and Women's Hospital

Issues:

Improvements - Designs were done several years ago for pedestrianization of the mall in this area and were not accepted. At present, we know of no proposed construction schedule for adjacent parcels to which to relate the proposed pedestrian improvements. In particular, a major issue is to understand what the schedule is for developing the older Brigham and Women's Building in order to determine whether the mall can be done as part of such projects or needs to proceed independently.

Parking - To date, both institutions have indicated they can adopt policies that eliminate the present parking on their segments of the mall.

Service and Access - Some service takes place on this segment and can be accommodated through the provision of access across the pedestrian zone, similar to that which will be required for fire-fighting vehicles.



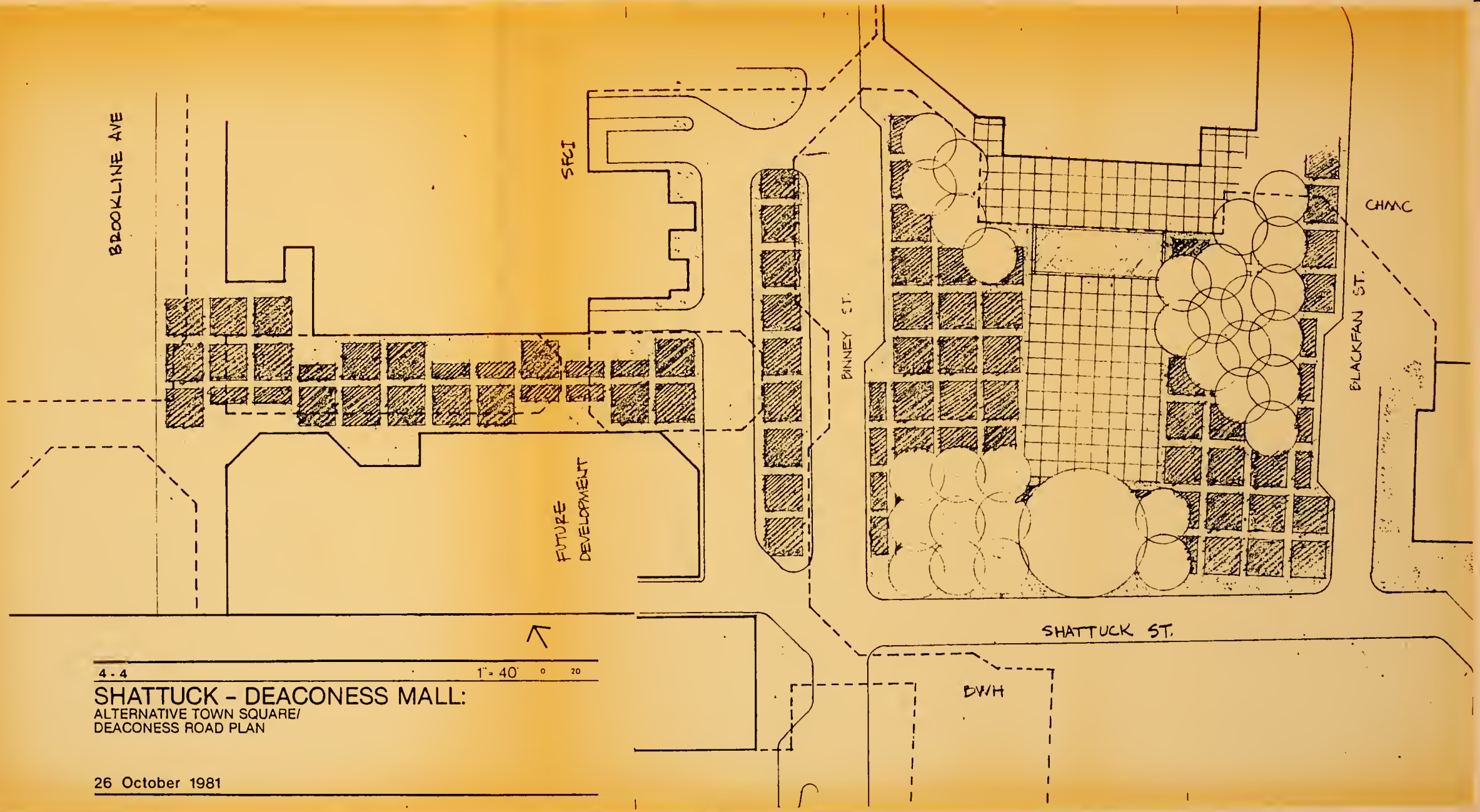
4 - 3

SHATTUCK - DEACONESS MALL:

OPEN SPACE PLAN

26 October 1981

CHMC
HMS
HSPH
Countway
HUNTINGTON AVE



4 - 4

SHATTUCK - DEACONESS MALL:

ALTERNATIVE TOWN SQUARE/
DEACONESS ROAD PLAN

26 October 1981

Segment 2:

Affected Institutions: Brigham and Women's Hospital, Children's Hospital Medical Center

Issues: Improvements - Similar to Segment 1

Parking - Similar to Segment 1

Service and Access - Similar to Segment 1

Segment 3:

Affected Institutions: Primarily Children's Hospital Medical Center, with Brigham and Women's Hospital, Sidney Farber Cancer Institute

Issues: Improvements - The design of this section will critically affect the quality of the mall. It can act as the "Town Square" of the Medical Area. Links to be considered are the second level connector which can dramatically frame this space, main entrance locations for the three abutters, and the major pedestrian connection to Beth Israel Hospital. The ground level design will critically relate to the present improvements of Brigham and Women's Hospital, the future location of the connection to Deaconess and the future possibilities for the Jimmy Fund Building. This segment is likely to be realized shortly as part of the proposed Children's Hospital Medical Center development of the Blackfan Power Plant site.

Parking - In order to maximize the quality of this space, most of the ground level parking should be considered as live parking serving the entrances and as general curbside drop-off and pick-up space. (The Children's Hospital Medical Center is considering developing garaged parking as part of the site).

Service and Access - The emergency entrance of Brigham and Women's Hospital and the main entrances of two of the hospitals are off this site. Additionally, several buildings have service access from the area. All of these are likely to remain and need accommodation.

Segment 4:

Affected Institutions: Sidney Farber Cancer Institute and Children's Hospital Medical Center

Issues: Present projections for development of this segment seem to be in the longer range future. No major work is needed at present to make this link because the pedestrian traffic can move along the publicly-owned Deaconess Road. However, its future location and qualities will depend heavily on the most appropriate way to relate to expansion appropriate for Sidney Farber Cancer Institute. The two options in figures 4-3 and 4-4 are shown only to demonstrate the range of possible locations, fully recognizing that much further planning will be done in the future. Figure 4-3 shows the mall going between a building to be developed by Children's Hospital Medical Center and an expanded Sidney Farber Cancer Institute (assuming a land exchange and the acquisition of Deaconess Road from the city). Figure 4-4 has the mall going through the first level of an expansion of the Sidney Farber Cancer Institute which would cover the entire site (assuming the same acquisition of Deaconess Road and the exchanges of the Jimmy Fund Building for the Children's Hospital Medical Center-owned portion of the site).

Segment 5:

Affected Institutions: Deaconess Hospital and Joslin Diabetes Center

Issues: Improvements - A large park-like space bordered by a second level connector at Deaconess is shown. The open space development is likely to occur in the longer range future because of the undetermined schedules for the abutting sites development.

Earlier improvements may take place in conjunction with closing off traffic access to Brookline. A major issue is that the streets and park are owned by the City, whose cooperation will be necessary to achieve any change. However, any closing of Deaconess Road and Joslin Place must be examined in light of NEDH's Harris Hall and the JDC development plans. Until these are set, Joslin Park will be

used in its present configuration for this part of the mall.

Access - It is hoped that most of the site can be a purely pedestrian amenity. This can be most fully realized if the Joslin Diabetes Center expands in a way that moves their main entrance closer to Pilgrim Road.

Action Project: LONGWOOD ARCADE

Project Number: 1981-18

Framework Element: Open Space

Current Schedule (as of October 1981):

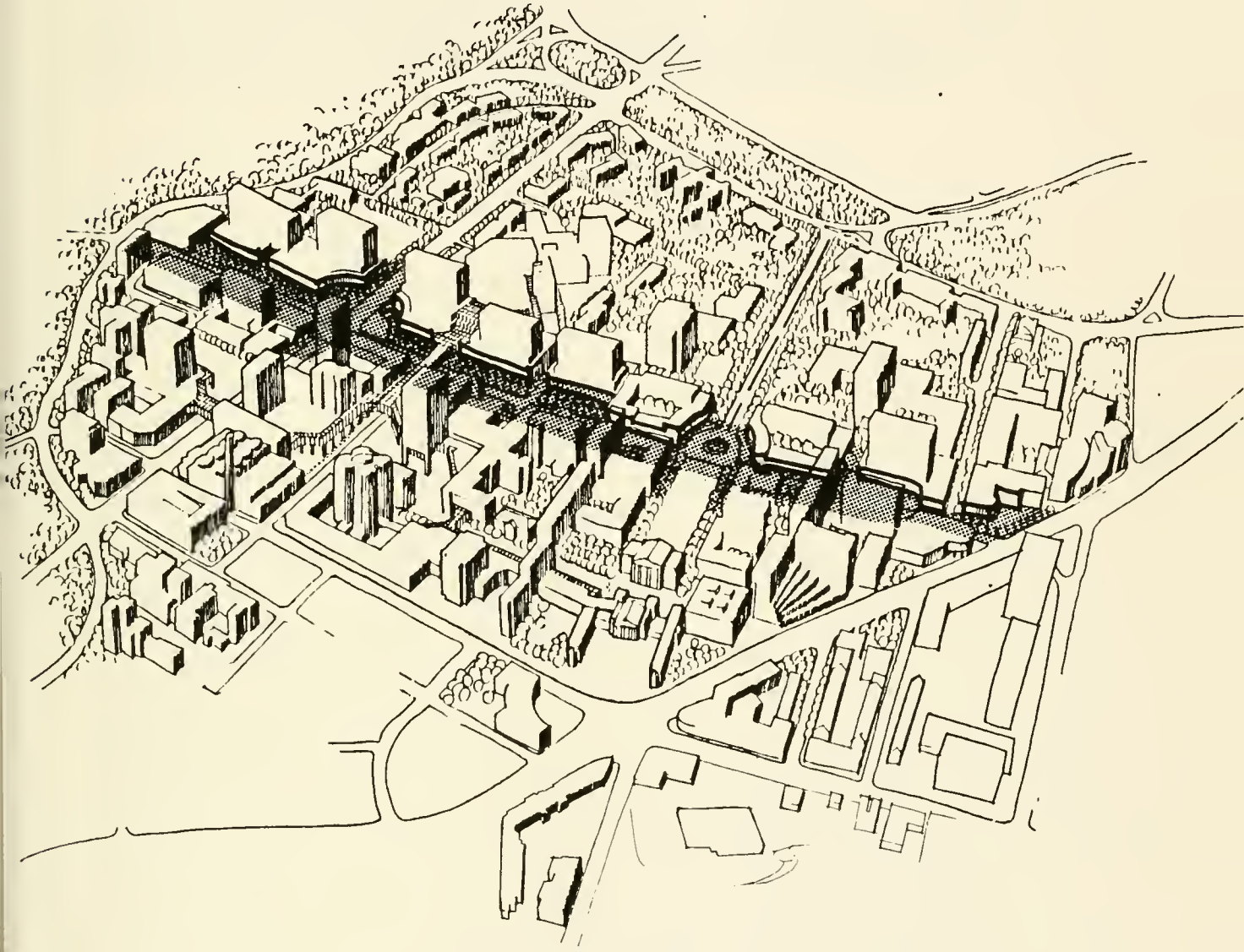
To proceed in fiscal year 1983.

Project Description:

Design Concept. Longwood Avenue will continue to be a major access road for the area institutions. It is hoped that it can become a tree-lined, urbane, sheltering street which will act as an important public facet of the MASCO area (see figures 4-5 and 1-16). Preliminary studies indicate that it might be possible to develop a tree-planted arcaded sidewalk in front of the south-facing new construction of the north side of Longwood Avenue, which can be continuous from Temple Israel to Boston State College (except for narrowings occurring by the existing dormitories and the Boston Lying-In property). Additionally, curved and arcaded spaces frame key segments of this pedestrian space: first, at the Huntington intersection, to terminate the Arcade and form a gateway; second, at Brookline Avenue, to form a plaza; and third, to relate to the symmetrical, curved geometries established at the intersection with Avenue Louis Pasteur.

There is a good likelihood that the north side of Longwood Avenue can become an important address for medical offices, medically related ground floor commerce, and conference and meeting activity, whether developed by the institutions who own (or are likely to own) the land or by private interests (see Framework Element 5. Proposed Development Policy.) These usage possibilities should be clarified as much as feasible in order to begin directing street improvements supportive of the proposed uses. (Traffic considerations were discussed in Framework Element 1. Traffic and Access.)

Next Steps. Further guidelines should be established for the development of



4-5

OPEN SPACE

LONGWOOD ARCADE

the Longwood Arcade, particularly for the Brookline Avenue intersection and the Boston Lying-In site. This study should be coordinated with recommended studies of Proposed Development, particularly to explore the economic consequences of such proposals as establishing setbacks that permit planting and the provision of off-street passenger unloading and parking.

Action Project: LONGWOOD CROSSING

Project Number: 1981-19

Framework Element: Open Space

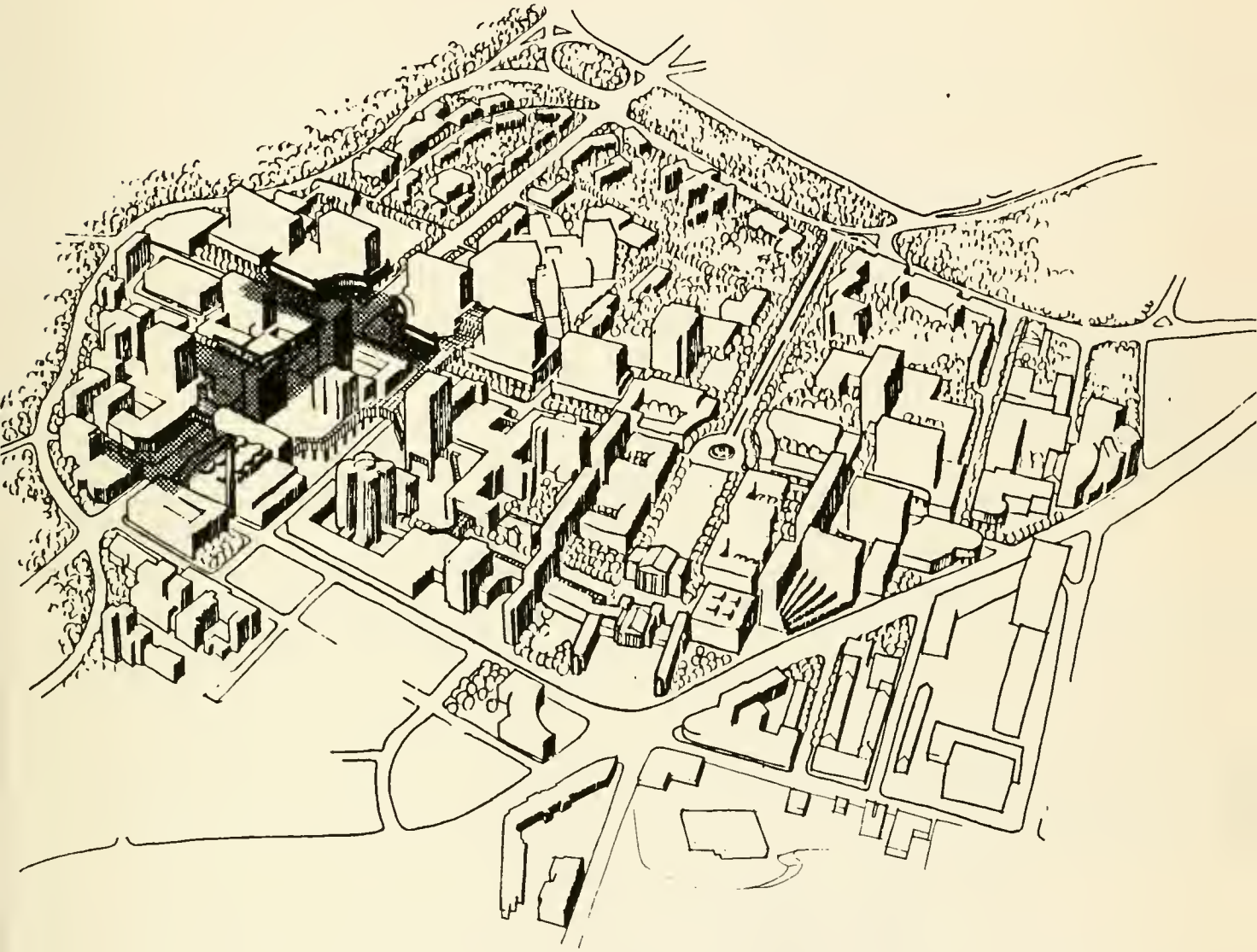
Current Schedule (as of October 1981):

To proceed in fiscal year 1983.

Project Description:

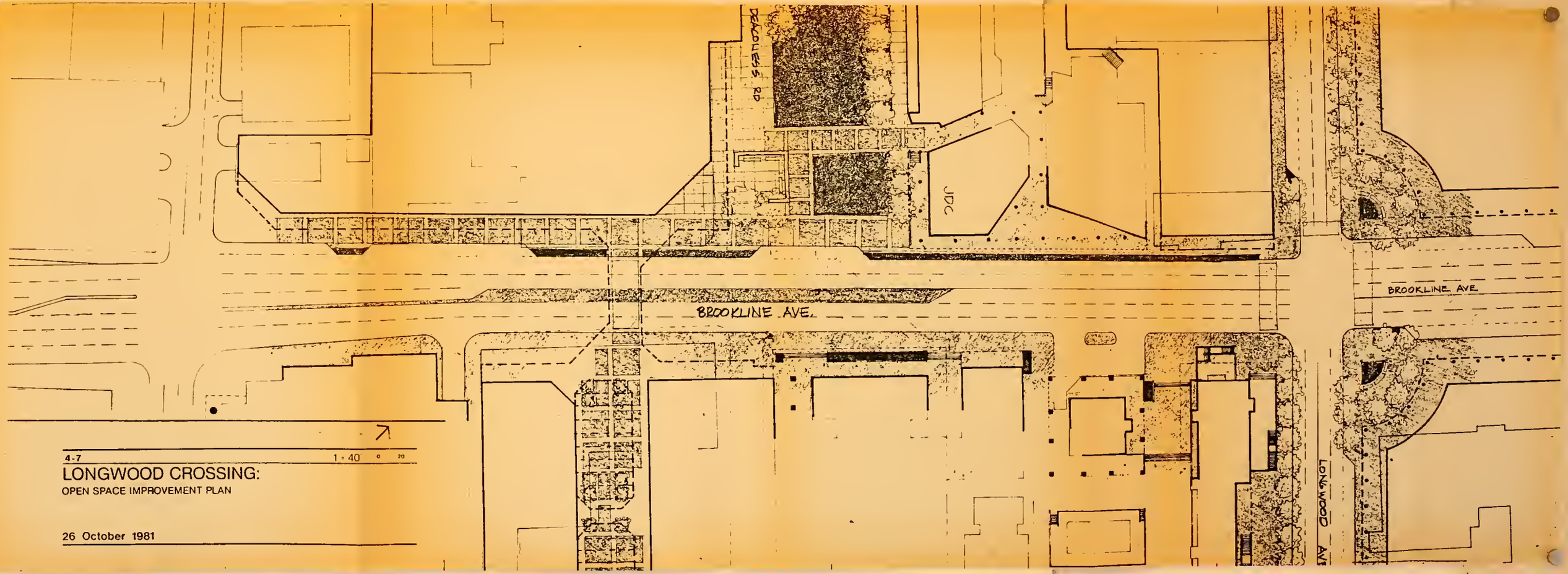
Design Concept. Longwood Crossing, the segment of Brookline Avenue between Francis and Longwood, could become both "the place to go" for the area, and the "front door" on the major traffic artery crossing the LMA. Activity and spatial qualities should be improved as the present commercial areas are reenforced (as will likely result from present projected construction plans). The quality of the environment should be improved and more dramatic expression given to this gateway to the area, including: a signage gateway near the Riverway; a bridging gateway formed by a second level connector linking future commercial spaces (reenforcing the crossing of Brookline by the Shattuck-Deaconess Mall, expressed here also as a gallery to the south and park to the north); and a central strongly defined plaza at the intersection of Longwood Avenue (see figures 4-6 and 4-7).

Future Steps. Further guidelines for Longwood Crossing need to be developed. (The designing of the Longwood Arcade and Shattuck-Deaconess Mall are likely to cover the most critical aspects of the design of this Action Project area.)



4-6

OPEN SPACE
LONGWOOD CROSSING



LONGWOOD CROSSING:
OPEN SPACE IMPROVEMENT PLAN

26 October 1981

Action Project: SECOND LEVEL CONNECTOR

Project Number: 1981-20

Framework Element: Open Space

Current Schedule (as of October 1981):

Agreements issues to be pursued in fall 1981-winter 1982. Action project to proceed in fiscal year 1983.

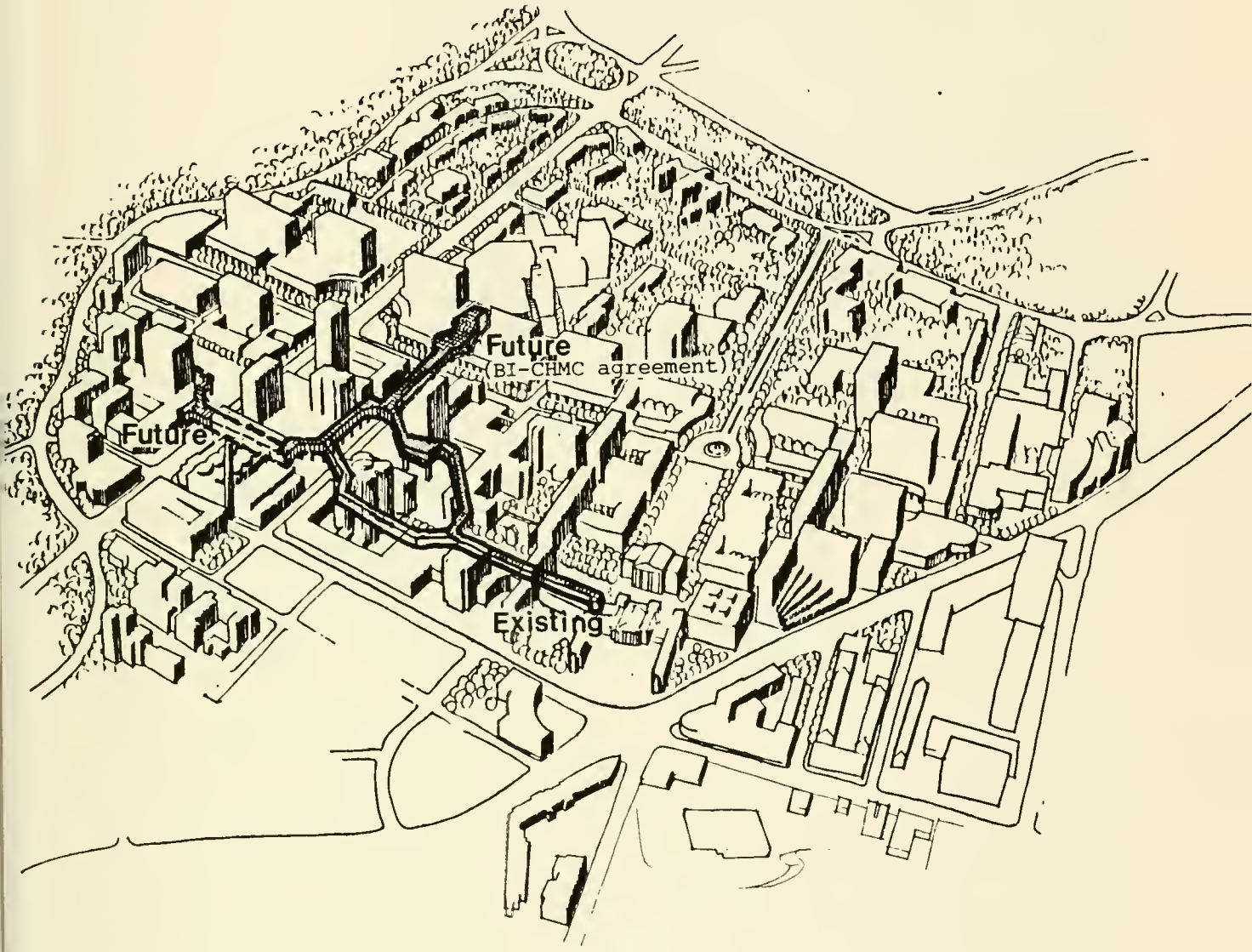
Project Description:

Design Concept. Many of the medical facilities in the LMA are already connected by either tunnels (from the Deaconess under Brookline Avenue) or second level connectors (e.g., Sidney Farber Cancer Institute, Brigham and Women's Hospital, Children's Hospital Medical Center and some of the Harvard Medical School research buildings). It is projected that staff, equipment, and research projects will generally become more coordinated and shared, particularly to improve opportunities to support services or research. To accommodate this increasing interchange among institutions, the Framework should contain a protected, closed non-street-level pedestrian network, provided for in future developments (see figure 4-8).

The strategy for achieving this shall be to augment the present system through providing for second-level connectors in new construction. This Action Project should further articulate the need for such connectors, policies for their use, and security issues to be resolved. The most effective locations (suggested in the perspective) should be clarified, and a schedule for the achievement and improvement of each segment be developed. Implementation and detailed dimensional decisions should be executed by Agreements between the abutting owners for each link.

Agreement. Required for Beth Israel/Children's Hospital Medical Center Second Level Connector:

Affected Institutions: Beth Israel and Children's Hospital Medical Center



4-8

OPEN SPACE

SECOND LEVEL CONNECTOR

Issues:

The link needed to connect all the hospitals with an enclosed pedestrian path is that between the Children's Hospital Medical Center and Beth Israel. Children's Hospital Medical Center is presently planning a building for the Blackfan Power Plant site which can carry the present system to Longwood Avenue. Children's Hospital Medical Center staff have already indicated that they will include provision for connecting to potential construction that may span across Longwood that would extend the walkway to the Beth Israel properties. Hence, the system can be extended through agreement between these two parties. Issues to be dealt with besides those above include: detailing the best paths through each property; the relationship between the proposed connectors and other internal circulation; specific dimensional constraints; and policies for use, access and security.

Action Project: THE CAMPUS

Project Number: 1981-21

Framework Element: Open Space

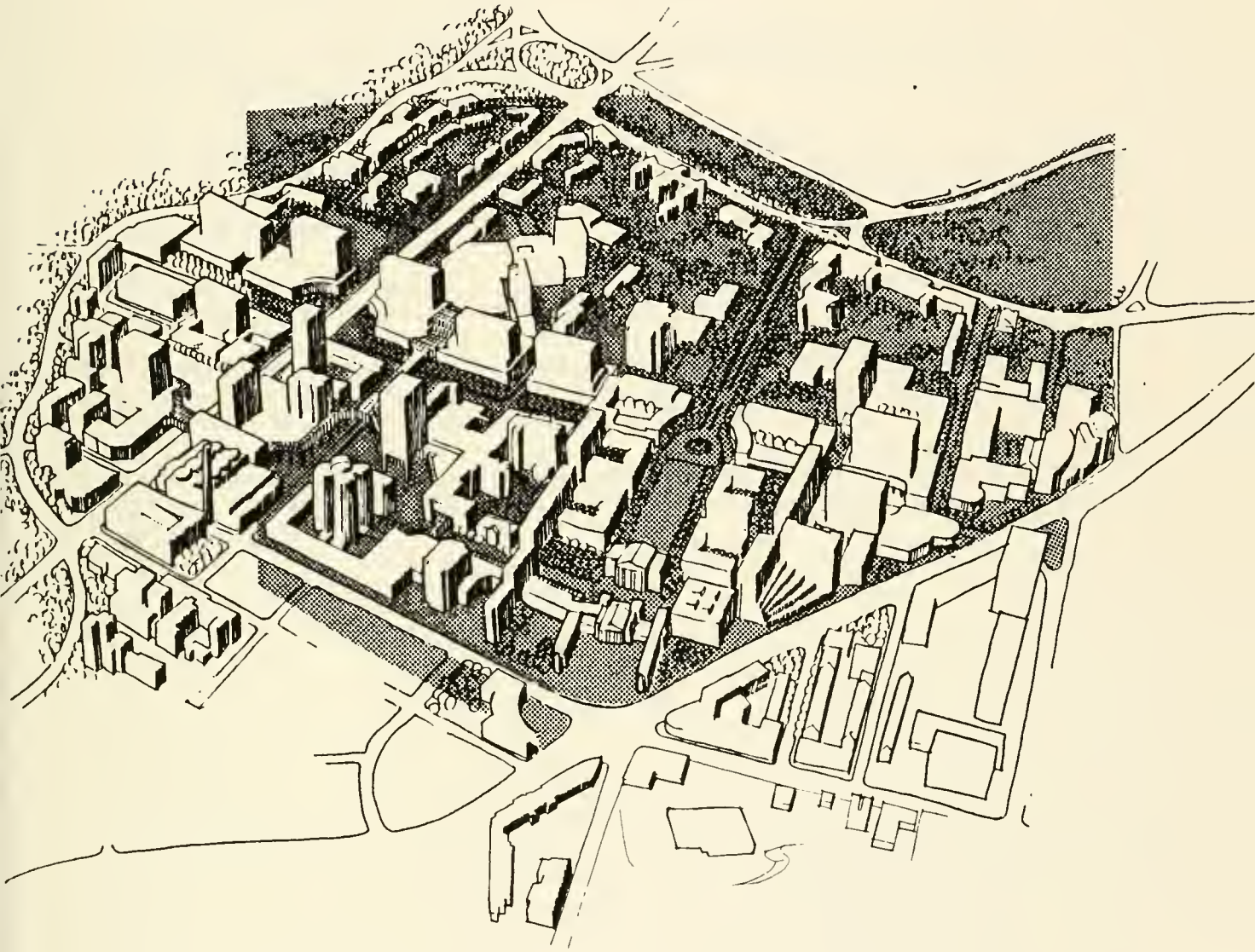
Current Schedule (as of October 1981):

On-going open space design and further visionary Framework considerations should continue through fiscal year 1982 and beyond.

Project Description:

Design Concept. Priority in this Master Programming Process has been given to creating a Framework whose content could serve as guidance for selecting and proceeding on an initial set of Action Projects. This strategy was followed in order to gain the initial backing of MASCO members. As MASCO is given the support to proceed on these shorter term projects, the opportunity arises to begin to create a more detailed and comprehensive vision. Additionally, as the Long Term Process begins to involve people acting as agents of the neighboring groups and institutions, a vision can be formed that responsibly accounts to relevant interests over a much broader context. Much of the potential for developing a cohesive form for the area lies in creating a campus quality to the whole and linking to the larger open space system represented by the surrounding Fenway (see figure 4-9). While it is recognized that the LMA is composed of many autonomous institutions, there is the possibility that dramatic changes can take place. While part of those changes rely on understanding the future of institutions which are not MASCO members, (e.g., the high schools and state institutions), planning could be done now that established the parameters of such overall concepts, the first phases of which could be executed in the short term.

Future Steps. This Action Project should include projections for a campus environment to be developed over the long-term, certain design elements of which would be designated for implementation in the short term. The design would include:



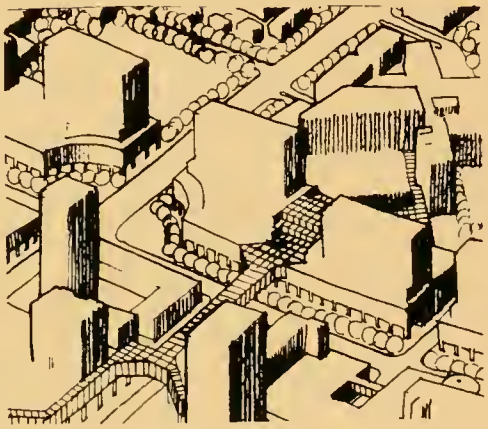
4-9

OPEN SPACE

CAMPUS

- Space-organization planning to achieve strong spatial coherence.
- Development of design guidelines, including controlling lighting, signage, fencing, gating, paving and planting that reenforce spatial and security concepts.
- Coordination of path systems (to be developed also as part of the Security element) and open space systems of all institutions' campuses.
- Linkages to the Fenway.
- Proposals for development of parking (presently a primary use of open space for Harvard and the other schools).
- Coordination of the design concepts (through the Long Term Process proposed in Framework Element 6) with the institutions in the LMA and the Fenway who are not MASCO members.
- Coordination with the Traffic and Access plans to eliminate as much through traffic as possible and suppress the visual disruption of service accessways.

Framework Element 5: Proposed Development Policy



Framework: 5. PROPOSED DEVELOPMENT POLICY

An important ingredient of the Framework is to satisfy the future growth needs of the LMA institutions and area commercial activity, along with enhancing the environment for institutional users and staff. The guidelines for this future development are summarized in figure 5-1, Potential Sites, and table 5-1, Development Guidelines. This Framework will allow the MASCO institutions to achieve the following development goals:

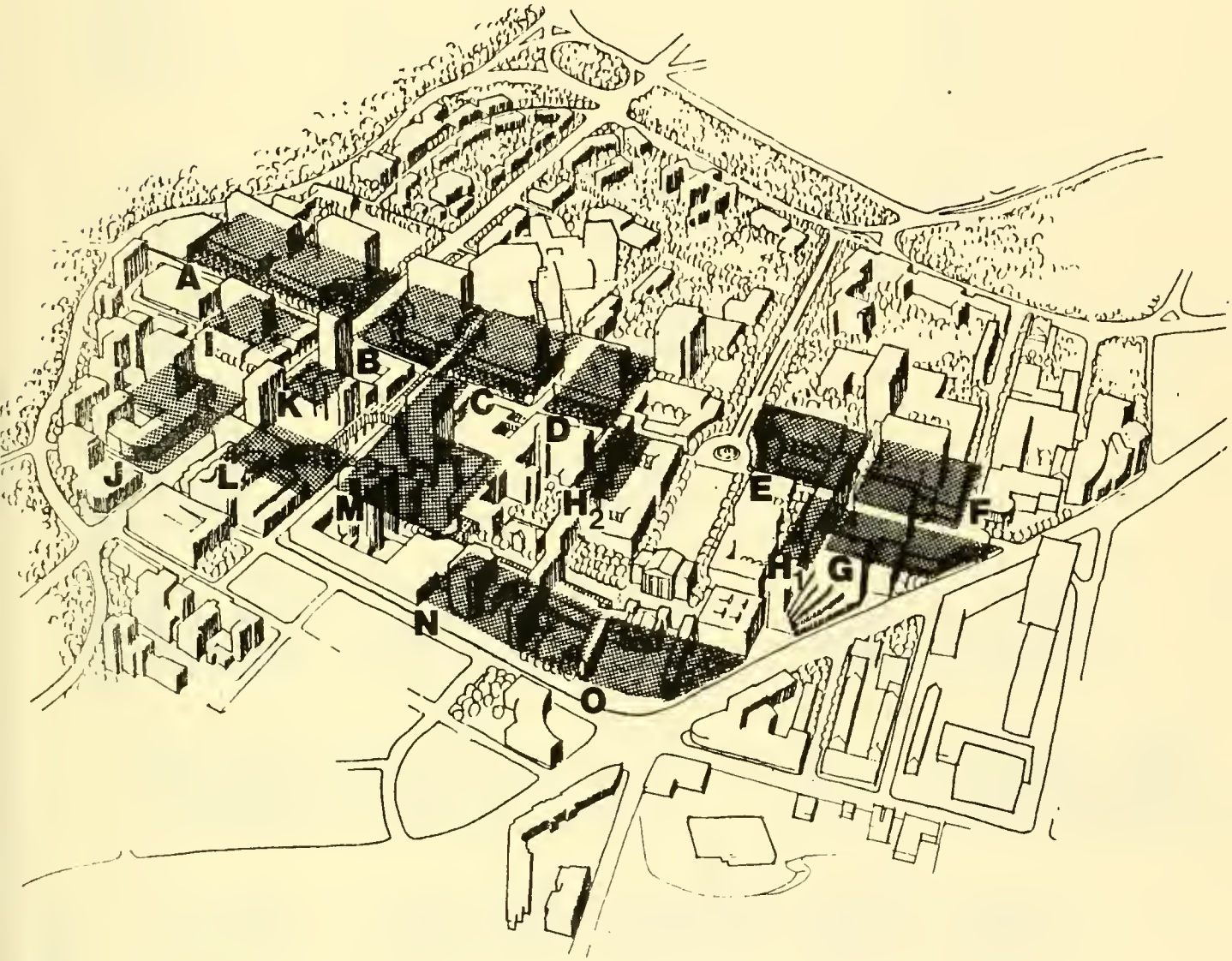
- To coordinate and promote orderly institutional growth.
- To increase the sense of community and create a "sense of place," by providing needed amenities and convenient ancillary services, thus enhancing the institutions' ability to attract users and staff.
- To organize and prioritize short-term development opportunities and needs so that their accomplishment can be commenced.
- To establish a development catalyst and planning role with MASCO to assist the institutions in achieving these goals.

The Framework is based on the following policies oriented to achieving these development goals (further discussed later in this Element):

a. Sense of Community and Coordinated Development. There is a need for having the LMA be an identifiable place as a whole. To help achieve this, it is proposed that MASCO maintain a set of design controls (see table 5-1). It is expected that this will help developers in that the guidelines can serve to indicate to them, neighborhood groups, or public agencies the consensus of the policies of MASCO members. This will help clarify the type of development that is likely to receive the most support, guidance which may be helpful for clearing legal hurdles or projecting future likely development.

b. Concentration of Commercial Activity. A critical aspect of attracting staff and clientele is to have the LMA a desirable place to be, a "neighborhood" with which they can identify. One aspect of this "sense of place" is an active concentration of commercial activity, which does not adequately exist in the LMA. Currently, the potential for commerce is under-developed, and there are insufficient services suitable for the people who work in the area.

The Development Guidelines in Table 5-1 are designed to establish a



5-1

DEVELOPMENT POLICY

POTENTIAL SITES

KEY

A	Temple-Winsor	H 1,2	(Harvard Medical School Sites)
B	MCA	I	Longwood - W. of Brookline
C	Binney to Blackfan	J	Deaconess - W. of Brookline
D	CMHC Dormitory	K	N. of SFCI
E	BLI	L	Frederika Site to Brookline
F	Mass. College of Pharmacy	M	Blackfan Power Plant
G	Harvard Dental School to Huntington	N	B & W on Francis
		O	Older Brigham

Table 5-1 DEVELOPMENT GUIDELINES

		Projected Time of Development	Key Actors	Projected Use	Dimensional Features: a. Setback	b. Height	c. Pedestrian Circle	Parking	Element Reference	Recommended Need For Further Guide-line Development	Recommended Interim Improvements
A	Temple-Winsor	1981-85	Winsor School Temple Israel	Conference Office (Hotel) Commercial -ground floor	Longwood setback 16' Plaza at Longwood and Brookline (similar to Site B)	Cornice Line. Match Vanderbilt Hall (corner pavillion)	Arcade on Longwood and Brookline 12'	On-site	Longwood Mall Brookline Place	Immediate	
B	MCA	1983-?	BI MCA	Office-Research Commercial -ground floor -two stories at second level connector	Longwood setback 16' Place at Longwood and Brookline (similar to Site A)	Cornice Line. Match Vanderbilt Hall (corner pavillion)	Arcade on Longwood and Brookline 12' Second Level Walkway on Binney St.	On-site Drop-off internal to site (coordi-nate with site C)	Longwood Mall Brookline Place Second Level Connector	Immediate	Landscaping
C	Binney to Black-fan, N side of Longwood	1988-1990	CHMC Private Owners	Office-Research Commercial -ground floor -two stories at second level connector	Longwood setback 16'	Cornice Line. Match Vanderbilt Hall (corner pavillion)	Arcade on Longwood 12' Second Level Walkway on Binney St.	On-site Drop-off internal to site (coordi-nate with site B)	Longwood Mall Second Level Connector	Immediate	
D	CMHC Dormi-tory	1990-?	CHMC	Office-Research Commercial -ground floor (Dormitory?)	Longwood setback 16'	Cornice Line. Match Vanderbilt Hall (corner pavillion)	Arcade on Longwood 12'	?	Longwood Mall		Landscaping
E	BLI	1983-?	B & W	Office-Research Commercial -ground floor Conference	As exists Plaza geom-etry, scale definition, materials-to match Harvard Medical School Dormitory (Preserve Richardson Wing?)	Cornice Line. Match Vanderbilt Hall (corner and center sections, respectively)	Arcade on Longwood	On-site	Longwood Mall	Immediate	

Table 5-1 DEVELOPMENT GUIDELINES (Continued)

		Projected Time of Development	Key Actors	Projected Use	Dimensional Features: a. Setback	b. Height	c. Pedestrian Circle	Parking	Element Reference	Recommended Need For Further Guideline Development	Recommended Interim Improvements
F	Mass. College of Pharmacy	?	MC of P	As at present	Longwood setback 16' Plaza terminating Longwood Mall	Cornice Line. Match Vanderbilt Hall	Arcade on Longwood	On-site	Longwood Mall		Landscaping
G	Dental School to Huntington S Side of Longwood	?	HDS Private Owners	As at present (add office and cont. ground floor commercial)	Longwood setback 16' Plaza terminating Longwood Mall Plaza at Huntington	Cornice Line. Match Vanderbilt Hall	Arcade on Longwood	On-site?	Longwood Mall		
H	HMS Sites	H_1 - ? H_2 - 1980-83	HMS	Office-Research	Match Existing	None	Protected Entry on Longwood	?	Longwood Mall	Immediate	
I	Longwood W of Brookline	1983-1990	JDF Private Owners	Hospital Office Research Commercial -ground floor	Longwood setback 10'	Cornice Line. Match JDF		?	Longwood Mall		Landscaping
J	Deaconess W of Brookline	1983-?	Deaconess Private Owners	Hospital Offices-Research Commercial -ground floor	Brookline setback 18'	Cornice Line. Match JDF	Arcade on Brookline (Second Level Connector-bridging Brookline)	?	Brookline Place S-D Mall		
K	N of SFCI on Brookline	?	Deaconess SFCI	Office-Research Commercial -ground floor	Brookline setback 18'	Cornice Line. Match SFCI	Arcade to coordinate with SFCI, CMHC	?	Brookline Place		

Table 5-1 DEVELOPMENT GUIDELINES (Continued)

	Projected Time of Development	Key Actors	Projected Use	a. Setback	b. Height	c. Pedestrian Circle	Parking	Element Reference	Recommended Need For Further Guide-line Development	Recommended Interim Improvements
L Fred-erika Site to Brookline	?	SFCI CHMC	Office-Research Commercial -ground floor Hospital	Brookline Setback	Cornice Line. Match SFCI	Arcade on Brookline Second Level walkway and gallery (see options)	On-site	Brookline Place S-D Mall Second Level Connector		Landscaping on Deaconess Road
M Black-fan Power Plant	1981-85	CHMC	Hospital Office Commercial?			Major plaza relating to entries, S-D Mall	On-site?	S-D Mall Second Level Connector	Immediate	
N B & W on Francis	?	B&W HMS	Hospital Office			Continue Second Level Connector-Brigham Pike?	?	S-D Mall Second Level Connector		Landscaping on S-D Mall
O Brigham	?	HMS B&W	?	(Preserve existing original pavillions?)		Gateway to LMA at Brigham Circle	?	S-D Mall Second Level Connector		Landscaping on S-D Mall

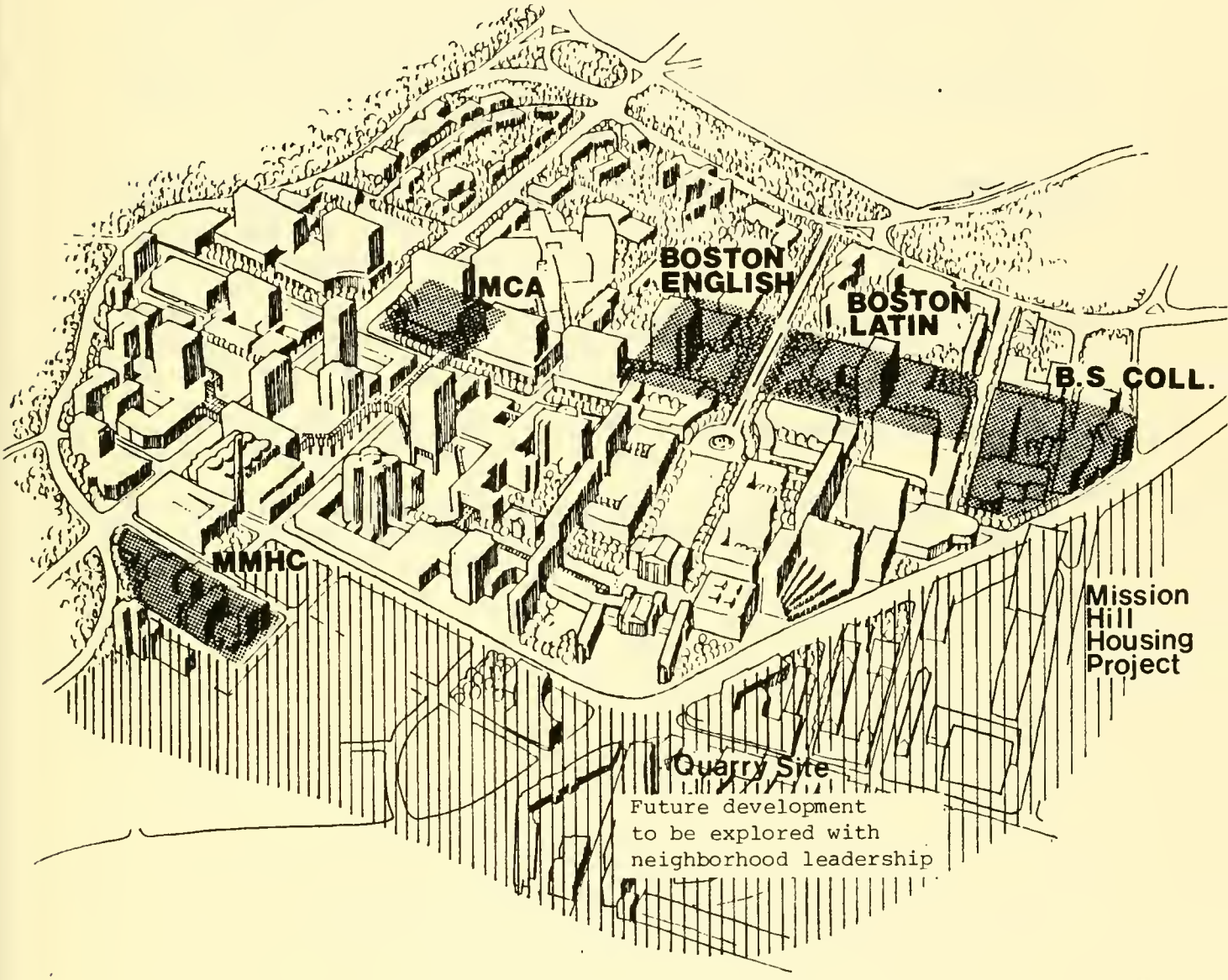
center for commercial activities that reenforce the existing commerce on Brookline Avenue (called Longwood Crossing). Secondarily, commercial activity is proposed as part of future new development on Longwood Avenue (the Longwood Arcade), as needed to serve medical needs of the users of the future office and hospital developments. Commercial activity is also recommended on both ground and second levels where the proposed second level connector intersects the Longwood Arcade and Longwood Crossing. Additional concentrations are projected at Brigham Circle, to serve the needs of the neighborhood and at the Longwood-Huntington intersection, to serve the nearby Fenway institutions. However, these have a lower current market potential.

While the commercial concentration at Longwood Crossing can possibly become a regional attractor for specialty shopping, this is not its primary purpose, and it is unlikely that large amounts of commercial space will be developed (or should be, considering the undesirability of greatly increased traffic and parking demands). The primary users range from students and visitors needing a place for congenial activity, to medical staff with little time needing convenient locations for their services. The projected commercial pattern encourages concentrated development for those who need a "place to go," and spreads along the routes of staff circulation for the convenience of staff.

c. Institutional Growth. As figure 5-1 indicates, there are many sites for institutional growth to take place. Although the nature of future demands is somewhat indeterminate, the Master Programming studies indicate that there are enough sites available within the boundaries of the LMA to meet all presently projected needs for institutional growth. There also seems to be considerable congruence in the expectations as to which institution might develop which sites (as suggested in table 5-1).

d. Residential and Recreational Needs. These two area needs have not been satisfactorily resolved in this initial master programming project. These functions are critical to the establishment of a sense of community and for properly serving staff and students in the area. However, these needs are not economically competitive site uses with the developments projected herein for the LMA. This suggests that ways to meet these needs will have to be found beyond the sites presently owned by MASCO members. Particularly for recreational facilities, Agreements may need to be developed among multiple area institutions to coordinate accommodation of the individual needs.

e. Long-term Development Issues. Perhaps the most dramatic change in the character of the LMA would result from development change on properties mostly not owned by MASCO members (see figure 5-2). For example, an extensive, improved campus can be achieved only by working with the



5-2

DEVELOPMENT POLICY

LONG TERM DEVELOPMENT ISSUES

Fenway institutions and having appropriate improvement on the sites of the public educational institutions. Similarly, as mentioned above, improving security and developing a sense of community depends on working with neighborhood groups to make improvements in the area as a whole. Hence, a critical policy for MASCO is to establish ways of working with the public agencies, community forces and other area institutions that will help put those sites into appropriate development.

f. MASCO Role in Area Planning and Development. It is proposed that MASCO expand its role to help further the development recommended in this Framework Element. This is further explained later in this section. The primary purposes would serve to:

- Initiate and give continued stimulation to needed development, including helping to package proposals, conduct bidding for development parcels, and acquire parcels for needed land-banking activities.

- Act as a financially involved developer, with the backing of individual members or groups of them.

- Continue areawide planning (as described in Framework Element 6. Long Term Process), to help the development activities of members be mutually reinforcing.

Development Needs of the Longwood Medical Area

Commercial. There are approximately 20,000 professional, administrative, and clerical employees in the medical institutions located in the LMA. In addition, over 1,700 patients travel to and from the area daily. Between staff, patients and visitors there are as many as 25,000 people in the area each day associated with the medical institutions. Total annual payroll exceeds $250,000,000 according to a study by the First National Bank of Boston. It is a paradox, that, in spite of the high concentration of population, there are very few support services and retail facilities.

According to the First study, medical area employees spent in Boston over $100,000,000 dollars in 1980. While only 32% of the employees reside in Boston, those living outside Boston spend 52.4% of their income in Boston. For selected retail purchases, medical area employees spend 51% of their food purchases, 60.5% of clothing, and 41.4% of household goods in Boston. Obviously many of these purchases occur in Boston retail centers, but the data does point to a substantial local retail potential for the medical area.

Based on standards for the shopping habits of employees it is estimated that the potential annual retail sales in the area, exclusive of food and drink, could range from $8,000,000 to $15,000,000. These estimates have been adjusted to take into effect the non-standard work habits of medical personnel (i.e., short lunch periods (half-hour), and the easily available in-house cafeterias).

In the near term, the location of new retail facilities should focus on Brookline Avenue near the Longwood Avenue intersection - Longwood Crossing. Retail activities should be located here because it is central to most employees, because it has presently the greatest concentration of retail uses, and because it is the most likely area of new site development. To be successful a retail area must have a "critical mass" of similar facilities and must also include traffic generators such as banks and restaurants.

Furthermore, the Huntington Avenue/Brigham Circle retail area is more oriented to the student and residential neighborhood population in that area. A longer term development strategy should include this southeasterly edge of the LMA. In the longer term it could serve some of the retail needs of LMA users and staff.

A preliminary listing of existing retail concerns in the Brookline/Longwood area is shown in table 5-2. The existing retail square footage approximates 50,000 sq. ft.

Table 5-2 LONGWOOD MEDICAL AREA: COMMERCIAL/RETAIL INVENTORY

Type	Number
Drug, Medical Supplies & Sundries	4
Liquor	1
Apparel/Accessory	4
Grocer/Food	1
Travel Agency	1
Flowers	1
Gas Station	1
Bank Branch Offices	5
Beauty/Barber	1
Restaurants & Pubs	6
Camera	1
Total	26

Source: Commercial inventory, PlanComm Assoc. (1978): and UCB

The largest and most diversified retailer in the area, the Harvard Cooperative Society (COOP), has a branch store at the Childrens Medical Center. Currently occupying under 10,000 sq. ft., the COOP management is of the opinion that there is sufficient demand to justify expansion to 15,000 sq. ft. Current annual sales exceed $3,600,000. Unfortunately, there is no room at the existing location for expansion. A new location will have to be found in order to provide a contiguous area for all services of the COOP. Those departments that are most likely to expand are: books, women's clothing, and business machines. COOP management has expressed interest in either the Beal/Barkan development or the BLI as a new site. As discussed later, it is also possible that a new COOP could be incorporated in the proposed Frederika/Children's site development. This would serve as an anchor to expand the retail activity in Longwood Crossing. Furthermore, this would serve to create activity and pedestrian traffic on the proposed Shattuck-Deaconess Mall.

Recommendations for potential new retail stores include the following. Many of these possible facilities would be small in size or could be combined as departments of several stores.

Restaurants	- including fast-food, health foods, and salads. A galleria of small restaurants with a common eating area could replace the current COOP store and/or be located at a central juncture point of the proposed second level walkway.
Printing	- reproduction and audio visual production
Medical Uniforms	
Employment Agency	- including temporary personnel.

Dry Cleaner & Tailor
Beauty & Barber
Clothing & Apparel - for male & female, including boutiques and small discount outlets.
Household Goods
Records & Music
Bookstore - possibly with coffee shop combined
Sporting Goods
Discount Health & Beauty Aids
Shoes
Greeting Cards & Gifts

The planned commercial development is geared to enhance the suggested pedestrian patterns. It might also be possible to include some retail activity, primarily food related, at important junctures of the second level walkway system. Although the primary short-term focus for future commercial development should be at Longwood Crossing, subsequent development along the Longwood Arcade as it emerges can also be considered.

Hotel/Conference. At present there is a generalized shortage of hotel rooms in Boston, and in particular in the Longwood Medical Area. Patients, relatives, and visiting faculty, conference participants, and general visitors create a strong demand for a hotel facility in the LMA.

The tight Class A room supply in Boston, however, is not likely to continue in the future. With 5,361 Class A rooms presently available in the City, there are 3,004 rooms under construction with another 1,230 rooms in detailed planning. With a 56% increase in the supply of rooms under construction, caution is required in planning future facilities generally. The LMA though is somewhat specialized and not necessarily subject to the same constraints.

There are 136 rooms in the immediate area, although the 54 rooms at 110 Francis Street will be closing in the next several years. There are also another 272 rooms in Kenmore Square which could be considered as a secondary segment of the market area. Occupancy at the Children's Inn and 110 Francis Street exceed 90%, an indication that more rooms are needed.

The major issue regarding market potential is whether the proposed 150-250 room facility to be built by Beal/Barkan at Longwood and Brookline will satisfy the near-term demand for conference facilities and transient housing. This proposed facility will include the following facilities.

	seats
Restaurant - moderately priced	75-100
Luxury Restaurant	125-150

	seats
Cocktail Lounge	125-175
Large Conference Rooms (3)	100-175
Small Conference Rooms (10)	15-100
Conference Suites (8)	10-15

Estimates of annual conference demand run from 17,500-35,000 room-nights by Padley and by Helmsley Spear. Continuing education conferences attract 13,000 physicians annually, of which 9-10,000 require hotel rooms for an average of 3-4 nights per conference. Except for scheduling conflicts, an LMA facility should capture most of these conferences and room rentals. Another important element is the hospital-related demand, which includes out-patients, relatives of patients, salesmen, government officials, visiting doctors, and other visitors. Projections of this demand that can be captured locally need more detailed analysis to determine an accurate estimate of its size. Helmsley Spear estimates 18,500 to 23,400 room nights. If a large first class facility were available in the area, it might well capture more than this estimated demand.

Because there have been limited facilities in the area at the present time, it is easy to over-estimate the need for new hotel rooms. There is, obviously, a need for more rooms and a conference center. The exact extent of the demand requires more detailed analysis to determine whether the proposed conference center at the BLI should be undertaken simultaneously. Demand might support another 100 room facility at the BLI if it were geared to longer term visitors, such as visiting professors. The timing of such a facility should be scheduled so as not to conflict with development of the Beal/Barkan project. The long planned Brookline Village hotel project might also proceed in the next year or two, further adding to the available supply.

Office. Without a doubt a sizable demand for commercial office space exists in the LMA, primarily for doctor's offices. Location is, of course, important, so that the space is convenient for the doctors and patients. A readily available supply of parking must also be convenient to the offices. The size and locational preference of the unmet demand needs to be accurately determined through a detailed survey of the staff of each institution. The Beal/Barkan project will include 75,000 sq. ft., increased from 50,000 sq. ft. as originally planned, due to a large demand from the staff at the Beth Israel. Demand also exists from the staffs of the Brigham-Women's, Deaconess, and Children's Hospitals. There is also a need for office space at the Harvard Medical School.

With virtually no vacant space at present, the existing supply of office space in the Medical area approximates 125,000 sq. ft., as summarized in table 5-3.

Table 5-3 LONGWOOD MEDICAL AREA: COMMERCIAL OFFICE SPACE INVENTORY

Location	Size (sq. ft.)
110 Francis Street	40,000
454 Brookline Avenue	15,000
Children's Inn	10,000
319 Longwood Avenue	30,000 est.
Mission Park	30,000
Total	125,000

Source: M.A. Padley & Company (1978), UCB

In addition to the need for commercial doctor's offices, there is also an undetermined need for administrative offices by the institutions. At least in the short-term, movement of some administrative functions to nearby office space would free space in the institutions for medically-related space needs.

Institutional. There are many sites for institutional growth in the LMA (see figure 5-1). A survey of the development needs of MASCO member institutions, and the studies of the commercial potential of the area as part of the Master Programming process, revealed that there are enough sites available within the boundaries of the LMA to meet all presently projected needs for institutional growth through the year 2000. Additionally, there seems to be considerable congruence in the expectations of those interviewed at the member institutions as to which institution might be the most likely potential developer for the various sites. Those who seem from the interviews to be the most likely sponsors for development for each site are indicated in Table 5-1, Development Guidelines. However, major questions (such as acquisition, land exchanges, and the agency for development) concerning who will develop each site remain to be settled.

Research. Virtually all of the institutional staffs have indicated a need for additional research space at varying times in the future. Table 5-4 summarizes the presently estimated needs as indicated in area interviews.

Table 5-4 LONGWOOD MEDICAL AREA: ESTIMATED RESEARCH SPACE NEEDS

	Square Footage	Remarks
Beth Israel	80-100,000	
Brigham & Women's	50-100,000	est.
Sidney Farber	30- 40,000	
Deaconess	10- 20,000	
Children's Hospital	50-100,000	est. (long-term)
Harvard Medical	70,000	
Harvard Dental	10- 20,000	est.
Harvard Public Health	10- 20,000	est.
Total	240-470,000	

Source: Arrowstreet and UCB - 1981

From a planning point of view these facilities can be located in structures similar in design to office structures but with added mechanical services and differing space layouts. Research activities can in most cases take place in either medical or office facilities providing they are separated and not commingled.

Some institutions have also indicated that research space can be located in buildings shared with other institutions, provided the laboratories are separated. Others have indicated a strong lack of interest in shared space. Shared but separate research space for several insitituions is an effective method of solving the short-term (1-5 years) needs of institutions who do not have sufficient need at present for a full-sized research facility. This approach will be outlined in more detail below in the suggested development scheme for the Frederika/Children's site.

Parking. As stated earlier in this Framework, the unanimous opinion among member institutions is that at present there are sufficient parking spaces available for MASCO employees and users. The problem is one of utilization and proximity to point of need. As stated in the Parking Element, the problem is one of management and coordination, not the addition of spaces for current use.

At present there are approximately 4,100 spaces in the MASCO area for use by staff and visitors. Some of the existing garages have excess capacity. The major unmet need is parking for the Harvard Medical School area. Future development, must, of course, provide for its parking needs along with attempting to resolve some of the utilization problems existing today, especially for outside medical staff and out-patients.

Residential. This major need of the LMA - for improved residential accommodations - remains to be satisfactorily resolved. These functions are critical to the establishment of a sense of community and for properly serving staff and students in the area. This need has not yet been resolved because it is not economically competitive with the other uses projected for the LMA sites. This suggests that ways to meet this residential need will have to be located beyond the sites presently owned by MASCO members.

Recreational. Along with several medical institutions, Simmons and Winsor have cited the immediate need for an improved recreation facility and a willingness to share it. Both schools have their own needs for such a facility, and it is not clear whether these can be solved in a complementary fashion. To coordinate these needs, MASCO might well sponsor a joint venture with the hope that other LMA occupants and resources might aid in finding a solution.

Development Guidelines

The Development Guidelines as outlined for the Longwood Medical Area address both the long and short-term development goals and needs for the MASCO institutions and the area. The Future Development plan illustrated in figure 5-1 focuses primarily on the commercial and quasi-commercial needs (such as research) of the LMA. It concentrates retail and commercial activities at Longwood Crossing. It provides an enhanced environment for both staff and users of the area. And it indicates that institutional growth can be accomplished without conflict with neighborhood development plans.

The near-term development program is outlined in table 5-1, Development Guidelines, and figure 5-1, Potential Sites. These indicate projected uses, urban design dimensional features and characteristics, schedules and involved actors for all major potential development parcels within the LMA.

The total floor area shown for all LMA institutions exceeds 6,500,000 square feet, including over 1,500,000 square feet of office, research, and retail space. The development program outlined provides for a doubling of office and research space. Existing retail space of 50,000 square feet would be increased to over 110,000 square feet. Present estimates of potential retail sales indicate that this expansion is justified and should be sufficient to meet expected demand. Parking is provided only to accommodate the needs of new development projects.

If, in the future, demand should justify additional space development, the heights of the structures could be increased thereby increasing density. Urban design guidelines are limited to pedestrian and ground-related features and continuities with the existing structures to be retained, such as the cornice line height to be preserved (see table 5-1).

Expansion needs in the longer-term (10-20 years) are somewhat uncertain. The Development Guidelines have sufficient flexibility in terms of density and height to satisfy virtually any expansion requirements. Site availability in the longer-term is concentrated near Huntington Avenue, because of the uncertainty regarding the future of Boston State College and other non-MASCO properties located in that area (see figure 5-2, Long Term Development Issues).

Near-term Development Sites. The commercially oriented or joint use development projects which could occur in the near term include:

	Site Key
Frederika/Children's	L
Deaconess (Harris Hall site)	J
Shields Warren-North of SFCI	K

	Site Key
Temple-Winsor (Beal/Barkan)	A
Massachusetts College of Art	B
BLI Rehabilitation	E
Brigham & Women's Research Building	N

The exact timing of any of these development projects is always subject to uncertainty. Except possibly for the Massachusetts College of Art site, these sites have fewer impediments to develop in the next five years than the longer term projects outlined below. A brief discussion of each follows:

Frederika - Children's. A major new short-term development possibility proposed in this development program is a multi-use project on the Frederika, Redstone Laboratories, and Brookline Avenue Medical Building sites. Though the sites are separately owned, the project points out the benefits of joint development by several institutions. The proposed project includes street level retail (17,000 sq. ft.), parking above for 250 cars, and an office/ research tower comprising upwards of 150,000 to 200,000 square feet.

The need for this project is justified by several users: SFCI needs office and research space. CHMC needs parking and possibly some office space. The COOP needs more space; and many doctors in the area need office space. There might also be a short-term office or research space need at Brigham and Women's that could be located in the project. The short-term space would then be available to SFCI as they grow into more space needs in the longer-term.

The location of active retail uses from Brookline to Binney Streets is an important ingredient in being able to create and activate the Shattuck/ Deaconess Mall. Employees and staff of all institutions will benefit from the extension of retail activities down Brookline Avenue and into the heart of the LMA. The development, as proposed, would also be the keystone of the second level walkway to the Deaconess.

The joint development of this project under MASCO direction, protecting each institution with long-term lease arrangements, is the most beneficial way to break the land-banking "stand-offs" of each separate institution. This is a classic situation where each of the institutions gain more from joint development of the sites rather than proceeding on separate courses.

Deaconess (Harris Hall). The projected Deaconess expansion of institutional and office space on the site extending from Harris Hall to Brookline Avenue is planned for 1983. It should include street level retail on Brookline Avenue. Approximately 11,550 square feet of retail activity, replacing the marginal uses which presently exist on the Brookline frontage in this area, will greatly enhance the retail character of the avenue. The second level

walkway at Deaconess Road could cross Brookline Avenue here to provide a major linkage for the institutions on both sides.

Shields Warren - North of SFCI. This small vacant piece of land fronting on Brookline Avenue, if not needed for the radiation laboratory, should be developed as retail space to continue the planned activity at Longwood Crossing. Though small in size (2100 sq. ft.) it is important to maintain the continuity of the retail activity on the street.

Temple-Winsor (Beal/Barkan). This mixed use project at the corner of Brookline and Longwood is the most likely to occur in the short-term. The project comprises:

250	hotel rooms
2	restaurants
1	cocktail lounge
600	parking spaces
75,000	s.f. doctors' offices
26,250	s.f. retail space
21	conference rooms

According to the developer, Mr. Robert Beal, the project is due to commence construction in mid-1982. At present the developer is awaiting approval of a Commercial Area Revitalization District Plan (C.A.R.D.) from the state and city so that tax-exempt financing can be made available. There appear to be no problems at the present time.

Massachusetts College of Art. The long-discussed redevelopment of the MCA site into approximately 200,000 square feet of office and research space depends on the uncertain relocation of the College. The project should include 20,000 square feet of street level retail, set back from the corner to create a small plaza. Parking for approximately 250 cars should also be included, to serve immediate doctors' office and other needs in the new development. The redevelopment might well be a longer-term project because of the uncertainty of the future of MCA.

BLI Rehabilitation. Brigham & Women's is negotiating with a developer to redevelop this 200,000 sq. ft. property. The development program has not been finalized at this point for the multi-use project, but may include office, genetic research, and possible conference facilities. A conference facility of 100 guest rooms, 6 meeting rooms and 3 restaurants would utilize approximately one-half of the space in the existing buildings, with the remaining space available for other uses. Planning for this project should also take into consideration the office and classroom space needs of the neighboring Massachusetts College of Pharmacy and diverse use needs of Harvard.

Brigham & Women's Research Building. This proposed research building of approximately 100,000 square feet is in advanced stages of planning to proceed shortly. Design of this project should ensure that pedestrian linkage to the Shattuck/Deaconess Mall is preserved.

Long-Term Development Sites. The Development Guidelines include many longer-term (10-20 years) development possibilities, including: Boston State College, if relocated; the Longwood Avenue medical office building and adjacent parcels; the original Peter Bent Brigham Hospital; the Quarry site at Brigham Circle, to name a few (see also figure 5-2). Many of these sites are in the Huntington Avenue area and begin potentially to impinge on some of the surrounding neighborhoods.

The residential needs of the LMA might well be satisfied in these longer term projects. Although needs for expansion in this area are as uncertain as the site availability, it is imperative that a dialogue be established with the Mission Hill Planning Commission and other community leaders to start investigating possibilities of joint interest, so that both institutional and community needs can be satisfied.

The Role of MASCO in Development

To accomplish the development program as proposed requires a catalyst to provide more detailed planning assistance and to take an active role in development implementation. This planning and development catalyst role should be performed by MASCO. A centralized function is needed to accomplish the following:

a. Initiate and give continued stimulation to needed development.

b. Serve as a joint-venture developer, with the backing of individual members or private developers.

c. Continue areawide planning (as described in the next section) to help the development activities of members be mutually reinforcing.

Development Catalyst. So that this master program does not gather dust on bookshelves in the LMA, there must be an organization to begin implementing the Framework proposed. For each development project there are distinct actions required to encourage the proposed implementation. In the Temple-Winsor project, for instance, the developer will need planning assistance in the preparation of the C.A.R.D. plan needed by the city and state to make tax-exempt financing available. The same C.A.R.D. plan should include many of the other sites included in Longwood Crossing, so that this significant financial incentive is available for other MASCO-sponsored projects.

Should the proposed Frederika/Children project be considered plausible, MASCO should play a significant role in shaping the detailed agreements and development program. Without someone negotiating with and shaping the numerous actors into a cohesive entity, a complex project such as the one proposed will never become a reality.

Joing-Venture Developer. Although the financial assets of MASCO are dependent on the individual institutions, it is most appropriate that MASCO explore in detail the role of owning land and actively participating in commercially-oriented developments. The long-term rewards to MASCO and to the member institutions could be most significant.

The development process in general is at present undergoing major changes. Financial institutions providing the funding usually take a significant equity funding and ownership position. The developer becomes more fee-oriented, with or without a partial ownership of the project. Using a developer/consultant, MASCO could joint-venture with the institutions and/or developer for its long-term financial benefit, especially in cases where the land is controlled by itself or its member institutions. To qualify for HEFA funding for office or research oriented projects, a non-profit or institutional sponsor is needed,

and MASCO could fulfill that role.

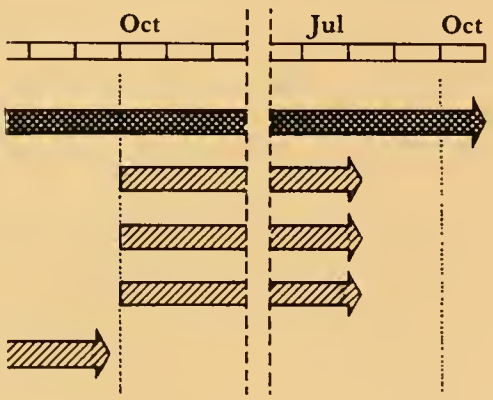
Areawide Planning. As outlined in Framework Element 6. Long Term Process, the continuing development and implementation of this Master Programming process require on-going area planning efforts by MASCO. In particular, projects such as those involving Boston State, Massachusetts College of Art, and the Mission Hill Planning Commission, need an LMA actor to work with the outside institutions and interests necessary to establishing a dialogue leading to a resolution of future uses. This capacity within MASCO is critical to its continued growth in providing area services to its member institutions.

Near-Term Action Projects

As a result of this Master Programming effort, MASCO has established a staff position of Manager of Development Coordination, to begin to carry out the MASCO roles discussed above. The following Action Projects represent recommended early priority efforts to be pursued by MASCO, with appropriate consultant support:

- Identify near-term potential development parcels and use projects, and define roles and MASCO actions required.
- Develop further Guidelines for potential development sites, including more detailed massing and use studies, and specific design controls.
- Survey institutional staff to obtain a detailed program for doctors' office space needs.
- Determine the extent of institutional administrative space needs that could be incorporated into a joint facility.
- Refine the estimates of near-term and long-term research space needs.
- Work with Beal/Barkan to develop a C.A.R.D. Plan and resolve parking issues.
- Convene the potential participants for the Frederika/Children's site to explore the possibilities of collaboration and to develop a preliminary space program.
- Assist Brigham and Women's in coordination with HMS and other interested institutions, and potential developers, in refining a space program for the reuse of the BLI.
- Undertake discussions with the Mission Hill Planning Commission and other community leaders regarding common issues.
- After consultation with Shields Warren, prepare a detailed development program for the vacant Brookline Avenue site.
- Open discussions with NEDH regarding retail and second level space program along Brookline Avenue.
- Open dialogues with area public institutions and responsible agencies - such as Boston State, Massachusetts College of Art and the BHA - concerning development futures of subject sites.

Framework Element 6: Long Term Process



Framework: 6. LONG TERM PROCESS

As has been indicated, many of the environmental problems in the LMA have grown to the point where the future of the institutions has begun to be adversely affected. This Master Programming effort has been the result of the desire of a reconstituted Board of MASCO to redefine its role, particularly to explore whether a more powerful coalition might be formed to become effective at dealing with areawide problems. The strategy so far adopted has been to start with small, concrete steps first and to set up a process whereby the larger, more long-term collaboration might achieve more dramatic changes. It is recommended that this strategy continue and that MASCO proceed to help coordinate the incremental growth of the area for two reasons. First, the disparate nature of MASCO's membership requires that many separate actions and decisions occur prior to the realization of a plan of action. This can lead to a rich, lively and diverse result. Second, since the membership in MASCO is voluntary, it will be necessary to build and maintain the backing of its membership, which can best be done by selecting first those steps for which consensus can be gained and which are most easily achieved.

A long-term process for the futher development of the LMA should be adopted as a key part of the Framework. Essential aspects of the process include:

1. Decision-making procedures, authority, and membership. MASCO has twelve member institutions, at this writing. Each has its own Board of Trustees, administration, and, for some, planning staffs or consultants. Because MASCO membership is voluntary and because many of the decisions it faces affect a large number of its member institutions, it will be necessary to develop a means for being accountable to all during the on-going planning process. In order to make the process efficient at the same time, the MASCO Board should be empowered to make planning decisions relating to the above Framework, Action Projects, and Agreements on behalf of its members and also to be obligated to present for approval all proposals and budget requests related to these efforts on a quarterly basis.

   During this Master Programming work, heavy involvement of MASCO Board members has been most helpful and their backing critical to the projected adoption of its results. In order to gain such involvement of the Board on a continuing basis, a Development Committee has been formed, composed of a group of Board members (similar to the Client Team under whose direction the Master Programming has proceeded), with authority to direct the on-going long-term process.

   To pursue the planning of some of the interests described above, more

detailed knowledge and proposals for cooperation will have to be worked out. Sub-committees will have to be established under the authority of the Board to do such detailed work. (Two such committees have already been formed - for Parking and Security.)

2. Tasks. The key work of the Development Committee will be to direct on-going planning. Among the tasks implied in the role are:

   a. directing the development of and amendments to the Framework;
   b. directing the planning, gaining approvals, finding support, and overseeing the implementation of action projects;
   c. coordinating the development of agreements.

   In essence these tasks are to oversee the long-range planning, its revision and amendments. Most importantly, it will be necessary to add further elements and enlarge the scope of consideration beyond what has been possible to date. In carrying out these tasks, it is recommended that careful consideration be given to involving affected parties - whether from the leadership or staff of MASCO members or of surrounding groups and institutions. The advancement of any of the projects or elements proposed should be done through the establishment of ad hoc committees for specific tasks, which can achieve the accountability and support needed to be effective in such a pluralistic setting as the LMA.

It is critical to note that this Master Programming report is part of an on-going process, not a definitive plan. This stage represents the initiation of a long-term planning process. Essential to this planning is establishment of a dialog with the surrounding community and non-MASCO institutions, and an open invitation for their involvement.

Next Steps. The initial step in continuing the Long Term Process has been taken with the hiring of the Manager of Development Coordination. His tasks should include:

- Shaping the agenda of the Development Committee.

- Tracking Action Projects and Agreements, including procuring consultants and contractors.

- Working with public agencies, other institutions and community groups initiating needed development.

It has been necessary to leave the Framework incomplete in important respects because of the lack of specific mechanisms through which to explore long-term issues. These relate to projecting overall, dramatic changes for the area - visions which were not appropriate to design during the initial Master Programming project and which would now be appropriate to put forward as the LMA institutions begin to authorize collective action.

The issues that need further pursuit in particular are those relating to (1) the futures of institutions within the LMA, and (2) the nature of development in the larger community surrounding the LMA.

1. Institutions Internal to the LMA. As has been mentioned above, the future of the high schools and the state colleges are the subject of some re-examination in public forums. Any changes such as closings, consolidations, plant renovations, or operations (such as bus routings) seriously impact key issues for the development of the area - e.g., security, coherence as a campus, traffic, availability of recreation. In order to work with these institutions it will be necessary to work with both state and city authorities.

   A second set of problems which will need discussion over the long term is to understand in more detail the future nature of collaboration among the educational institutions for services they might share (e.g., such as dormitories, recreation, and parking) and the future coordination among the medical institutions. For example, collaborations are being projected - e.g., a combined trauma center or the sharing of key staff among medical departments - which are likely to affect the physical characteristics of the area. It is hoped that the long-term process will help achieve the needed environmental support for such changes.

2. Larger Community Surrounding the LMA. The future quality of the LMA is very much affected by the improving character of the larger community. At this time, MASCO members have pledged not to expand their operations into the surrounding areas. However, in our interviews with several community groups, it appears that there are many issues of mutual interest. The long-term process should begin to define these common goals (e.g., improved housing, traffic, security, employment, amenities) and, with neighborhood leadership, find ways to achieve them. Key initial agenda items are development in Brigham Circle, the future of the Mission Hill Housing Project, external security, public transit, and the relationships among Fenway institutions. The combination of many public agencies involved (including, for example, the BHA, BRA, MBTA and MDC) and numerous community groups has made progress complicated to achieve. It is hoped that as the LMA institutions are able to support proposals in concert, it will make it more possible to achieve the changes that will dramatically improve the Longwood Medical Area.

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